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Social Entrepreneurship: An alternative solution for solid waste problem in Kathmandu city.

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Abstracts

Solid waste management is a burning issue in developing countries. It is one of the most neglected sectors from the government and private sector in Kathmandu city. The consequence of which local people have to deal with the health risk, polluted air, polluted water, degraded landscape and also reduction in touristic income. But this could be an opportunity to earn the profit which can be understood by social entrepreneurs. Social entrepreneurs by virtue take the social risk and convert it into the social value and economic profit. Thus, my objective is to understand how social entrepreneurship can address the issues of solid waste problem in Kathmandu municipality. The study of relationship between entrepreneurial process, innovation and entrepreneurial framework can shape the social entrepreneurial process to initiate and organize the business and to exploit the solid waste opportunity in Kathmandu. The relevant two case studies and interviews were carried out to understand the current condition of solid waste management process. I found that social entrepreneurship is one of the demanded fields of in Kathmandu city which not only solve the social waste problem but also helps society to raise their income along with sustainable sources of energies. By the help of 3R and Anaerobic digestion method the social entrepreneurs can start their business of renewal energy and can establish themselves as an important entities in Kathmandu market. This concept of social entrepreneurship will also help country to reduce the growing pollution problem and also strengthen their economy. Thus, social entrepreneurship is a prime solution for healthy and prosperous life in developing countries.

Keywords: Social Entrepreneurship, Organizational Innovation, Formal Institutional factors, Solid waste management process.

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List of Abbreviation and Acronyms

AD= Anaerobic Digestion

KMC= Kathmandu Municipality

SWMRC= Solid Waste Management Research Centre

SW= Solid Waste

SWM= Solid Waste Management

SE= Social Entrepreneurship

Chapter 1

Introduction

2.1 Introduction

The topic of my master thesis is about the Social Entrepreneurship in the field of Solid Waste Management in Nepal. The thesis will enlighten the importance of Social ventures in the field of waste treatment in Nepal. The requirement of Social Entrepreneurs in such field is because of the massive waste related problems in Kathmandu Municipality and government inability to deal with such problem. Waste is also regarded as a source of income and generating energy. As government of Nepal is failing to understand and extract free energy from such waste resources, it has been very necessary for private organization to come forward to solve the social problem like waste. The thesis will also facilitate future researchers in the field of growing social entrepreneurship in waste management sectors. In order to concentrate on other prefix we need to understand the general problem of waste and its consequential effect in the world especially in developing countries.

"Like other entrepreneurs, social entrepreneurs are creative thinkers, continuously striving for innovation, which can involve new technologies, supply sources, distribution outlets, or methods of production" (Dees, 2001). Successful social entrepreneurs in waste management sector should apply innovative techniques to deal with the waste problem. New technology and ideas are always in high demand. Innovation has always played vital role in entrepreneurship to exploit the opportunities. The newness in technologies and strategies to take advantage of the waste opportunities are the necessity agendas for social entrepreneurs in developing nation. They need to make positive difference in their process and strategies to be success. The difference should resemble of solving waste problem effectively otherwise the initiation and investment would be in the drain. The adoption of cutting edge technologies strengthen social entrepreneurs to produce maximum level of sustainable energy which further helps country in a long run. The innovation in strategy to retain waste from the community can also be challenging decision for social entrepreneurs.

“Proper waste management presents an opportunity not only to avoid the detrimental impacts associated with waste, but also to recover resources, realise environmental, economic and social benefits and take a step on the road to a sustainable future” (UNEP, 2013). Although, the waste business has possibilities of earning profits, there are very few investments by private business groups in such market. “Increased waste generation creates more environmental problems in this area, as many cities are not able to manage wastes due to institutional, financial, technical, regulatory, knowledge and public participation shortcomings” (Ngoc & Schnitzer, 2009). Despite of lack of interest from private ventures in waste sector and also due to lack of proper implementation of waste management strategies from government entities, it has become clear that social entrepreneurship is the most required and deserved field of study in waste management sector in developing nations.

The term Solid waste (SW) is very common to the present world. The generation of solid waste is inevitable in nature. It was not the major threat in the past but now, it has became one of the crucial topic to think for all the People, Government, Non Government Organization (NGO), International Non Government Organization (INGO), Environmentalist etc. "Solid waste and its management have been receiving fresh attention from academics and development practitioners" (Pelling, 1999). Similarly, managing solid waste market is one of the attractive businesses in the world. “The global waste market, from collection to recycling, is estimated at US$410 billion a year, not including the sizable informal segment in developing countries” (UNEP, 2013)

Municipalities are mainly authorizes for concerning Solid Waste Management (SWM), ever since it has been accounted as the job of the government. From the early stage of civilization till now, the waste has always been a concern for public agencies. Government defines the responsibility to municipalities for proper waste treatment. However it has always been a problem to the municipality to meet the objective set by the government of developing nation “they often face problems beyond the ability of the municipal authority to tackle” (Sujauddin et al., 2008). Burntley (2007) defines that the reason for municipality to fail to meet the nations objective is because of mainly due to lack of organization, financial resources, complexity and system multi dimensionality

The problem of waste management is huge in developing nations then in developed nations. Lack of infrastructure and financial support to manage the growing waste in developing nation caused a series of problems to their environment and to the health of their people. "The challenge of urban solid waste is particularly peculiar to developing countries, where resources are limited but urbanization is occurring rapidly" (Ahmed & Ali 2004). This level of environmental risk and health risk relies on which level does the countries lies in. If the country is very poor in economy then it has very high probability of having health risk and deteriorated environment. As the countries level increase from low to high, the ability to invest in the environmental and health issue will also increases thus the level of risk decreases from high to low.

Urbanization is one of the prime reasons for growing waste. "Un manage land filling, Increasing population levels, booming economy, rapid urbanization and the rise in community living standards have greatly accelerated the municipal solid waste generation rate in developing countries" (Minghua et al., 2009). People from all over the country are moving towards the big cities. The attractiveness of job opportunity, health facility, and qualitative education provides enough reasons for people to pursuit their settlement in urban life than suburbs in developing countries. "As the region's population has become more urbanized, the number and size of the cities has increased" (Cohen 2004). The consequence of such urbanization leads to more solid waste generation which results to chaos in managing such generated waste.

"Recycling a tonne of aluminium saves 1.3 tonnes of bauxite residues, 15 m3 of cooling water, 0.86 m3 of process water and 37 barrels of oil, while preventing the emission of 2 tonnes of carbon dioxide and 11 kg of sulfur dioxide" (UNEP, 2013). This example given by UNEP (2013) shows that waste also possesses positive value to the society if it is treated properly. Waste provides equal opportunity to establish the country's economy. According to Ahmed and Ali (2004) "Formal public/private partnerships will increase the scope of activities of the private sector. This arrangement may improve efficiency of the entire Solid Waste Management sector, and create new opportunities for employment". In respect to that, the proper waste management techniques can solve these growing wastes in a systematic manner and along with that it can also produces green energy. Thus this green energy can be a sustainable source for the developing nation.

Because of such reasons social entrepreneurs are getting more and more attracted towards this waste sector. From the definition of Social Entrepreneurship by Zahra et al. (2009), he defined "Social entrepreneurship encompasses the activities and processes undertaken to discover, define and exploit opportunities so as to enhance social welfare by creating new venture or managing existing organization in a innovative manner". Thus the waste as considered as a societal problem and it requires proper innovative techniques to be discarded effectively. Social entrepreneurs take this problem as an opportunity to earn money and add value to the society. Where, additional value to the society is always greater than the earnings from the business.

In the same way, the attractiveness of such social market and need of solution of societal problem are not an enough evidence for the social entrepreneurs to join in this business. There should be favorable environment in the market to magnetize social entrepreneurs. They seek favorable environment where they can establish and can help society to be prosperous and healthy. Social entrepreneurs can only flourish when government has failed to provide the better facility to the people. Seelos and Mair (2005) also report that "in the context of developing countries where the government and market structures are not effectively developed, social entrepreneurs come up with innovative initiatives which not only expand and grow on an impressive scale but, at the same time also promote sustainable development by addressing a wide range of human, social, economic, and cultural problems". The government imperfection in providing the basic requirement and no private firm willing to participate in such market then social entrepreneurs can create its importance in such market. The participation of private companies will also affect the social entrepreneur's possibility in the market. If there are numbers of different private companies competing for providing different facilities to the local people then there are very few chances for social entrepreneurs to be successful

The concept of social entrepreneurs in waste management was well followed by "Waste Concern" established by Maqsood Sinha and Iftekhar Enayetullah in Bangladesh in 1995 which was explained by Azmat (2013) in his article "Sustainable Development in Developing Countries: The Role of Social Entrepreneurs". This example can be very influential and encouraging factor for Nepalese social entrepreneurs as well. Thus there is a huge perspective for social entrepreneurship in the field of solid waste management in developing nation like in

Nepal. The entrepreneurs can apply his/her knowledge, skills and experience to convert such waste into some meaningful resources and thus earn enormous amount of profit. Although the attractiveness of this business can catch the attention of many national and international social entrepreneurs to join in the market development process; it also demands certain business environment in the country. The success factors for the social entrepreneurs in the field of solid waste management are mainly based on the characteristics of market and environment of the country.

2.2 Area of Study

Nepal is one of the least developing countries having poor economy and been suffering from huge waste related problem since decades. The urbanization in Nepal is rapid and haphazard, creating problems in facility management. The urban population in Nepal in 2001 was approximately 3.2 million (CBS, 2003) and it is estimated that the annual growth rate of the urban population in Nepal will be 6.5%, the highest growth rate in South Asia (UNEP, 2001).

"The contribution of the solid waste by the industrial sector is smaller compared to the municipal solid waste in Nepal. Since industrialization is slow in Nepal, the amount of the hazardous waste generated is normally insignificant" (Pokhrel & Viraraghavan, 2005). Kathmandu Municipalities (KTM) consist of high number of residential areas and centrally located government offices, it also consists of two highly renowned Universities and many colleges, besides that there are very good hospital treatments and nursing homes. Because of the necessity of good education, good working place and good health facilities, people from all over the country shift to KTM and reside inside the valley.

Due to the rapid increase in population inside the KTM valley, there has been in- sufficiency of equal distribution of core resources which are basic needs of human life. The people of KTM has been frequently complaining about an unavailability of 24hours electricity and clean drinking water in their home, which is also one of the core problem due to increase in population. Apart from that every ward of KTM is facing huge problem of disposing their house hold waste and industrial waste. People dump their house hold garbage in a near container which is provided by

the local government authorities, if it is available or else in a river bank or empty land field are some easy option to settle down their garbage. The unplanned and disorganized policies as well as weak strategies of KTM, solving the waste problem had and has been leading to raise of this problem in a top notion, in result of which local people have been facing health related problem and other ambiguous problems associated to their daily life.

The history of KTM valley from few hundred years back was totally different then the present condition, the valley used to be famous place for green vegetation, including dense forest and clean rivers flowing throughout the valley. It has very cultivated land and city is renowned for city of temples and pilgrims. Increase in waste along with increase in population has not only decreased the cultivated land and deplete the dense forest of KTM but it has also effected the natural environment and historical monuments which is available since late centuries. Increase in waste has also increased many health related issues to the local residents, as unplanned dumping in a land and filling it with harmful objective has caused air pollution, land pollution etc. Not only it have polluted the environment but it have also provided the shelter for different viral diseases like bronchitis, heart infection, eye infection, lungs infection, and some diseases related to skin.

Being a local resident of KTM valley, I have seen very less approach from the municipality office to follow successful guidelines from KTM office in order to address the growing problem of waste. They are implementing less effective majors to settle down the ever increasing waste related problems in one hand and in another hand they are not making major actions to convert such free waste into source of income by transforming waste into energy. There has not been any private firm registered and come up with the solution for these growing waste problems. Likewise, government has also been un-effective in calling for national and international franchising companies to invest in such field, where as there are very few support from public to help government to address such problems.

As being a student of business I see a lot of opportunities from which we can earn a huge profit from such free unwanted raw materials and if in case KTM office can follow some of my

suggestions than they will surely able to convert few things in their system which can transform their prime problem into core income source.

2.3 Research problem

SWM has been one of the prime concerned for all the nation of this planet. Specially, the developing countries are the true victim of waste problems. Because of the lack of required infrastructure, financing capacity, low economy, corruption, unstable government and lack of governmental interest are some of the reasons for un-effective majors in waste management system. Although, some of the government of developing nations are taking some strict strategies to deal with this problem, but most of the other similar nations are being compel to face the growing problem of solid waste. Entrepreneurial activities in such field are very few in number. Lack of private participation involved in solving societal problem has also added more responsibility to government (municipality). In fact, government of developing countries like Nepal is not implementing the plan of involving private public partnership seriously. Incapability of making effective plans to attract private ventures in public sector has spread the negative effect to the entrepreneurs which is also one of the discouraging reasons for private firms to participate in societal development.

Such lack of motivation and unavailability full fledge plan in infrastructural development activities by the government causes the nation development process slow, economy constrain and sometimes failure. Because of such reasons, the evidence for possibility of social entrepreneurs in waste management sector in Nepal are more deeper and perhaps contains higher probability of success in such market.

2.2.1 Research Questions

To guide the thesis for understanding significant problems and provide the solutions the requirement of research question is vital in every research. The research question will track all the required information in sequential order and helps the research to present the best knowledge towards the topic. Thus my research question is

“How can Social entrepreneurship address the issues of solid waste problem in Kathmandu Municipality?”

2.2.2 Research Objective

The objective of this research is to understand the possibility of PPP in developing nation like Nepal. The social entrepreneurs (SE) who want to participate with public agencies to solve the societal problem in developing countries could be very challenging objectives to meet for them. The paper will looks towards the positive and negative of SE participation as PPP. It will also try to search the answer regarding the possibilities of succession of such partnership.

2.2.3 General Objective

The main objective of this research paper is to understand the importance of social entrepreneurship in waste management sector in developing nation. The role of social entrepreneurs varies from market to market. The research will try to understand the role of social entrepreneurship in solving societal problem of waste in developing country like Nepal. It will focus on how a non-profit oriented organization can help to reduce the growing waste problem in Kathmandu municipality. It also focuses on the benefit for allowing such venture to participate in public market. Another main focus will be the strategical innovation that a social entrepreneur requires while dealing with waste problems. Similarly the factors for entrepreneurs to be success in waste management sector will also be analyzed. Lack of motivating factor for private participation in waste sector can allows social entrepreneurs to be flourishing. So the thesis objective is also understand how social entrepreneurs can get success and what type of environment do they require in waste treatment business. It explores how the existing strategies of waste treatments are performing and what are their weakness and strength, analyzing the waste opportunities and its inevitable threats.

2.2.4 Specific Objectives

- To identify the current performance of Kathmandu City in managing solid waste.

- To identify the required innovation for Social Entrepreneurs to deal with SWM business in Kathmandu City.

- To identify the feasibility of Social Entrepreneurs in solid SWM business in Kathmandu City.

- Suggest the probable and affordable solution for Social Entrepreneurs in SWM business in Kathmandu City.

2.4 Significance of the study

Many Developing countries face many challenges in managing SW. Inadequate collection; lack of advanced transportation and un-managed disposal of solid waste in the cities gives more pressure to the municipalities. Economical problems and lack of awareness of the extent of the problem are some of the major reasons for the SWM issues in developing countries. But it is clear that inadequate SWM system create many socio cultural, economical and environmental problems including health risk to the local people. Similarly, Due to the dense nature of population in almost all part of the cities or towns has created huge problem for municipalities to in-crenate the growing waste. We can say that open dumping is a common steps adapted in most of the developing nations. The rise is population, which results to increase in solid waste and as government incapability to solve the social problem of waste has increased solid waste management problem in Kathmandu city. Similarly, lack of enough and capable private sector in such area also pressured government agencies to deal with the problem. In this regards social entrepreneurship seems to be a viable solution to control the solid waste problem. So looking for a current situation of waste incarnation process in developing countries like in Nepal, the possibilities and constrains of SE in SWM in a developing country have tremendous futuristic

value which will not only reduce the amount to waste disposal but possess equal opportunity to produce energy from such waste and hence provide economic strength to the country.

2.5 Limitations

The selection of only household organic municipal solid waste has limited my studies. As there are various kind of societal problems related with waste and studying all at once will be more time consuming and high level of cost. Similarly, there have been very few studies on Social Entrepreneurship in Waste management sector. Searching literature regarding social entrepreneurship in waste sector is also a challenging task. As my thesis relies on comparative study methodology, so I have selected only two cases for my research. The selection of two cases has limited my studies with only some majors learning's and findings. Similarly the research is also limited to some of the innovation part as there are many influential factors which can bring change in degree in social entrepreneurship in waste management sector but this thesis will only constraints to change in organizational innovativeness and feasibility of social venture in waste business. The major problem while conducting this research was to gather Norwegian data and translate the available Norwegian articles. It is also very frustrating to obtain waste sector data. Besides these limitations, the research has also been done in limited time frame and also with limited resources in closed premises. So the result might not be fully viable for all other related condition.

1.7 Methodology in Brief

To understand the methodology in brief, I have selected qualitative research methodology for my research. The qualitative data are collected by taking interview with some respective organizational bodies. These data provides the close and relevant answers of qualitative questions. Qualitative research methodology is required in my studies as my study is based on personal experience and observation. The obtained data are very hard to measure in numbers and it is also difficult to analyze with calculating models. Therefore the qualitative research methodology is selected.

1.8 Thesis Outline

Starting from the introduction given in the chapter 1, this thesis has additional seven chapters. Chapter 1 consists of introduction to the thesis, its provision to analysis, reason behind selecting such topic, defining the research questions, selecting the methodology. Chapter 2 describes the related literature to link available theory into practices. Similarly, Chapter 3 explains the target problem, how it has been evolving and where it has created the problem at most. The chapter 3 also elaborate the area of study which defines how realistic is thesis for such area or in simple it describes the study area, parameters etc. Chapter 4 consists of methodology which describes the basic selection of research methods, and also explains how the data are collected and check how relevant the data is. Likewise Chapter 5 consists of case studies of two cities which gives the information of two countries and their working process. Furthermore Chapter 6 provides the empirical findings from the research methodology. Chapter 7 defines Analysis and discussion which elaborates the data analysis outcomes and finally the last chapter which is Chapter 8 gives the conclusion drawn from the entire research and outlines the probable recommendations.

Chapter 2
Theoretical perspective

2.1 Chapter Introduction

Before describing the social waste problem we need to keep in mind that the waste management could be one of the business platforms for the entrepreneurs. The solid waste management is the social problem of the society. Thus it is considered as a business opportunity for both entrepreneur and social entrepreneur. This chapter provides the depth knowledge of entrepreneurship and entrepreneurship process to identify the business opportunity. This chapter also tries to focus on the basic requirement of entrepreneurial process which is innovation. It will also explain how opportunity can be molded according to the innovation. The chapter also studies the types of innovation and its importance. Similarly, the external institutional factor for business and innovation will also be explained in this chapter. The external institutional factor also helps to reshape the organization and helps to determine the selection of innovation for exploitation of opportunity. Similarly, as solid waste is a social demand to be fulfilled, social entrepreneurship can come up with the idea to meet this demand and provides the social solution of solid waste problem. This chapter explains the social entrepreneurship additionally explains the difference between pure (classical) entrepreneurship and social entrepreneurship. The chapter ends with describing the external institutional factor for the social entrepreneurship.

2.2 Entrepreneurship

“Entrepreneurship is an activity that involves the discovery, evaluation and exploitation of opportunities to introduce new goods and services, ways of organizing, markets process and raw material through organizing efforts that previously had not existed” (Venkataraman, 1997). Entrepreneurship is an important process by which new knowledge is converted into products and services (Shane & Venkataraman, 2000).

Entrepreneurship is the process where an Entrepreneur's forms a venture by seeing the opportunity in the market, undertake the risk by the help of effective innovative idea or process and collect profit from the business. According to Lingelbach et al. (2005), in their paper describes that "Entrepreneurs have been described variously as bearers of risk (Cantillon, 1755), agents that bring together the factors of production (Say, 1803), or organizers of innovation (Schumpeter, 1942)". Perhaps this is not only the definition, Entrepreneur's are also the people who can able to for-cast the future demand, produce the future product or service which can be very essential for the people to live their life in ease.

"Research evidence suggest that in developing countries entrepreneurial actions can lead to both economic and social goals by reducing poverty and improving social indicators such as health and well-being, education, and self reliance" (Patzelt & Shepherd, 2010). "Entrepreneurship has played an important role in economic growth, innovation, and competitiveness, and it may also play a role over time in poverty alleviation" (Landes, 1998). According to Lingelbach et al. (2005) studies explains that "academic interest in entrepreneurs in developing countries began in the wake of decolonization, with interest until recently concentrating mainly on small-scale industrialization (for example, Schmitz 1982) and microenterprises (for example, Robinson 2001-2)".

Research also suggests that economic development leads to poverty reduction; however, economic growth presents a dilemma as some authors argue that economic growth cannot be separated from environmental impacts and is linked with environmental pollution and exploitation of natural resources (Bosselmann, 2006). Industrialization has not only provides economic backup to the society but also degrade its surroundings. Production needs resources and after delivering the final product it also produces different un-wanted items along with it. The consequence results yields to increase in waste materials. Thus production of un-used substances can create risk to the local environment. If these risks are not treated in an effective manner then it can cause environmental destruction and health related issues. However, these waste problem can also be an entrepreneurial opportunities for some entrepreneurs and stakeholders.

Waste management is not solitary constraint by environmental enthusiastic people but it has equal possibility for the business as well. Waste business is one of the booming industries in the world right now and it has been attracting number of entrepreneurs to pursue their dream to become wealthy. Using and processing the unwanted waste and producing useful substances and energy have led it to be popular among the young entrepreneurs in this growing world. The market of processing waste has not resulted to minimization of waste problem and make healthy environment for living being but it has also opened the opportunities for entrepreneurs to generate money for themselves and to the country. "The benefits ensue when waste is treated as a resource, a resource that can be recovered and put to productive and profitable use" (UNEP, 2013). These types of entrepreneurs are commonly known as Social Entrepreneurs. Social entrepreneurs have the similar characteristics like entrepreneurs but they have a different vision than the entrepreneurs. (We will be study the characteristics later in the social entrepreneurship topic but at first we need to understand the entire entrepreneurship process).

2.3 Entrepreneurship process

Wickham (2004, p. 134) explains that "The entrepreneurial process is the creation of new value through the entrepreneur identifying new opportunities, attracting the resources needed to pursue those opportunities and building an organization to manage those resources". The entrepreneurial process explores the available opportunity. Once the opportunity is identified the entrepreneurs search for the available and required resources to exploit the identified opportunity. It is also necessary for entrepreneurs to gather a organizational team and structure them in a required order so that they can use the resources to utilize the opportunity. Bygrave (2004, p.7) defines entrepreneurial process as involving "all the functions, activities, and actions associated with perceiving opportunities and creating organizations to pursue them". It also explains "the framework for understanding how entrepreneurship creates new wealth in several terms and for making sense of the detail in particular venture" (Wickham, 2004, p.133).

In the selective business like waste management, the waste is generally treated as an opportunity. Social entrepreneurs view this social problem as a chance to build themselves in the market and hence take as a prospect of business. The social entrepreneurs then search for the relevant

resources. These resources are might be available in the local market or in the international market. Most of the time social entrepreneurs improvise with the available resources and hence reduces their operating cost and providing the product in lower cost. The resources can be tangible and non-tangible depending upon the requirements. Likewise, the social entrepreneurs also need to understand that without organizing the team it is not possible to convert opportunity into profit. Thus they require qualified and skilled human resources to plan and organize to pursue the opportunity and utilize the available resources.

Figure 1: The Entrepreneurial Process (Wickham, 2004. p. 134)

The entrepreneurial process consists of four contingencies. These contingencies are Entrepreneurs, Opportunity, Resources, and Organization which we can see in above Figure. Without the proper understanding of these contingencies, no any entrepreneurs can able to start or to run the business. There are always some motives to establish the business and without the opportunity, resources and plan it is no point to imagine the motives of business. In order to entrepreneurs to obtain these two motives they need to identify the three contingencies of entrepreneurial process which are described in below paragraphs.

2.3.1 The entrepreneurs

"The entrepreneur is the individual who lies at the heart of the entrepreneurial process, that is, the manager who drives the whole process forward" (Wickham, 2004. Pp. 134). The entrepreneur does not always mean a single person who tries to change the process or product through innovative manner but it is also the representation of group of people as a single unit "team" or "entrepreneurial team". According to the Shane (2005), entrepreneurs are the person who recognize and discover the opportunity and take the risk to exploit that opportunity. The sole motive of exploitation of the discovered opportunity and taking risk is to gain profit from such opportunity. They also identify the required innovation for the entrepreneurial process. Thus as being a heart of entrepreneurial process, entrepreneurs plays an important role for discovery of opportunity, accumulating resources and organizing the team. They also help to invent the technology and strategies for the entrepreneurial process.

2.3.2 Opportunity

According to Wickham (2004, p.134) "An opportunity is the gap left in a market by those who currently serve it". He further explains that "it represents the potential to serve customers better than they are being served." The opportunities are thus identified when there is disequilibrium in the market of the state. According to Shockley et al. (2008, p.153), Kirzner (1973) argues that "opportunity is identified when market are in states of disequilibrium". "Existing market knowledge experience in serving markets and in depth understanding of customer problem influences both opportunity recognition and opportunity exploitation process" (Shane, 2000)

Dimov (2003) explains that "generally, entrepreneurs possess distinct cognitive processing skills and capacity that aid opportunity recognition and exploitation. Opportunities are target point for the entrepreneurs; where they observe something is lacking behind in available product or process or some improvements can be taken place or some newness can be replace the old on. "Some researchers have described this intuition in terms of prior knowledge of a particular field that provides individuals the capacity to recognize certain opportunities" (Venkataraman, 1997). From the definition of Venkataraman (1997), the opportunities are also can be identified by

perceiving the current market scenario and its depth knowledge about economics, defining what sort of commodities are necessary for people which can be further improved in order it to be popular among the people and also increase the value of current product or process which when modified to new and improved product. This new product hence can solve customers' needs more precisely and deeply.

In a general market there may be many ideas for improved products or services which can replace the current product or services but every improve idea may not necessarily be relevant for the business to be success. "Successful entrepreneurs and investors know that a good idea is not necessarily a good opportunity. In fact, for every 100 ideas presented to venture capitalists in the form of a business plan or pro proposal of some kind, only one or two ever receive formal funding" (Bygrave, & Timmons,1992). All good ideas may not necessarily a good opportunities. To become a perfect opportunity an idea should be on time of necessity and it should possess the characteristics of durability and reliability. "Opportunities have the qualities of being attractive, durable, and timely and are anchored in products or services that create or add value for customers or end users" (Timmons & Spinelli, 2009). Similarly, one of the reliable sources of opportunity is the technological changes. "Technological changes are an important source of entrepreneurial opportunity because they make it possible for people to allocate resources in different and potentially more productive ways (Casson, 1995). The opportunity should possess some additional value to the existing products or services. If the new idea cannot replace or shade out the current performance of products or services then it might not be profitable for the business. The innovative plays a vital role to identify and exploit the opportunities. By the help of innovation the entrepreneurs can deliver newness in the existing products and services. Similarly, it can also give birth to a new products and services if there is a necessity of such commodities in the market. "For truly innovative product and services, the market may indicate need or acceptance" (Timmons & Spinelli, 2009). Furthermore, the importance's of innovation in opportunity exploitations are described in later on this chapter with the new headings.

Thus opportunity is a very delicate entity for all the new as well as existing entrepreneurs for developing themselves in a sophisticated market and for remaining in a top flight and for their business growth. The opportunity can only be exploited by the help of cutting edge innovation.

Similarly, innovation can play crucial role in opportunity identification and cumulating relevant resources. Thus in the next topic, I will be discussing about the innovation and types of innovation and also focusing on the type of innovation require for my thesis.

2.3.3 Resources

"A resource is a source or supply from which benefit is produced. Typically resources are materials, money, services, staff, or other assets that are transformed to produce benefit and in the process may be consumed or made unavailable Organization" (www.wikipedia.org). They are the inputs that the business converts to create the output in delivers to its customers. "Resources are the things that a business uses to pursue its ends" (Wickham, 2004. p.200). These are the assets and by using such assets entrepreneurs can exploit the opportunity and meet their organizational goal.

There are mainly three types of resources which a business should possess in order it to establish in a market or to sustain in a market and they are:

- Financial resources:

Financial resources are those kinds of resources which a company can easily spend in the form of cash or those assets which can be easily converted into cash. For an example Money, Liquid securities, credit lines etc. These resources should be adequate with entrepreneurs for establish or run their business, without the support of financial resources no any entrepreneurs can think of aiming to achieve their goal and also could not think of capturing available opportunity.

- Human resources:

Human resource refers to the people who work for organization and help organization to achieve its goal. The organization uses skill, knowledge and experience of workers to exploit the opportunity and achieve its objective. Human resources are most needed resources in an organization. In absence of this resource, an organization could not aim to capture the

opportunity available to them. Even they need human resource to search for better opportunity for future. Besides searching opportunity, human resource are highly use for analysis of different analytical strategies.

- Operating resources:

These resources are said to be a support for human resource to aim for organizational goal. These resources are also a facility provided to the employee to work effectively and efficiently. These resources are considered as a physical helping resources and which allows people to do their job.

Not all the market possesses equally distributed resources, there are different markets which may contain either abundant resources or some may not possess sufficient for the business. Some of the resource might not be available at all in the market. The entrepreneurs should consist of maximum number of networks of suppliers and channels so that whenever they need some resources for their business they can always go through alternative solution in case of shortage. However, it is not always that availability of all the resources for the organization might help an organization to grow. Too many resources for organization can lead them to be careless and un-discipline for their objectives. "Some scholars have argued that too many resources can hinder growth because the firm will lack discipline" (Timmons and Spinelli, 2009).

Many nascent entrepreneurs have wrong concept that all resources must be in place, especially cash, in order to succeed with a venture. The reason behind this story is that they think that all the risk which they face in a business are most likely because of unavailability of resources particularly cash, but they miss one big conclusion which is, the importance of determined entrepreneurs and good opportunity. If entrepreneurs are not determined with their objective and if there are no any good opportunities to capture then possessing of resources cannot help any organization to run or establish.

Thus, resources are very important for an organization to achieve its goal if there is best opportunity available and precisely there must be strong-minded person who can plan for the future of the venture.

2.3.4 Organization

"The entrepreneurial process requires organizing not only to create new firm but also to use the market mechanism" (Shane, 2005). It is another important part of the entrepreneurial process. Without an organization, it is impossible or very difficult to achieve the goal set by the institution and to exploit the available opportunity. Organization consists of number of people who works under the same organization and whose job is to finish their respective work, help each other and to complete the project or to meet the organization objective within the required timeline. "The fact that the entrepreneur exploits an opportunity to recombine resources, and attempts to sell that recombination at a profit means that some mechanism for organizing the resources in a way that had not been done before is a necessary condition of entrepreneurship" (Shane, 2005)

It is very strange to see a business without its organizing team. "At the apex of new ventures is not a single entrepreneur; rather, there is an entrepreneurial team that drives the start-up and growth of the new venture" (Wickham, 2004, p.135). Team consists of right people for the right job, which when perform their respective job and those works collectively becomes a great decision for the organization. It is very important to collect the number of qualified people for the respective right job.

Certainly, there are always a better chance in organization for those people who know how to do the respective job, who have experience and skills related with the job. Famous investor Arthur Rock expressed the importance of the team over a decade ago. He put it this way: "If you can find good people, they can always change the product. Nearly every mistake l've made has been because I picked the wrong people, not the wrong idea"

From the above paragraph we have concluded that without a organizational team or people working for a business, we cannot imagine prosperity of the business. However, the importance of group of people doesn't address that an organization should consist of large number of people randomly. The requirements of people are limited and what limit them are the qualities and expertise of the people.

2.4 Innovation

"The role of the entrepreneurs is crucial in creating new economic activities that help to generate wealth, jobs and growth, as well as ensuring the well-being of society" (Avlonitis & Salavou, 2007). The creation of new market economy the entrepreneurs should have some new idea to address the market opportunity. The new idea which also gives birth to the innovation is the most important factor in the entire business process. "For its part, innovation is the single business activity that most closely relates to economic growth (Schumpeter, 1934), in his well-known study, "The Theory of Economic Development", likens the entrepreneur to the innovator in that the task of both of these economic players is to introduce new inventions into productive activity" (Dibrell, Craig, & Hansen, 2011). "So innovations by entrepreneurs tip the balance in the economy and lead to a process of creative destruction, via which firms that do not adopt the new technologies disappear" (Soriano & Huarng, 2013).

"Innovation is a tool for entrepreneurs and thus innovation is a specific instrument of entrepreneurship" (Drucker, 1985). Wickham (2004, p.10) in his book "Strategic Entrepreneurship" has written "An innovation is a way of doing something differently and better". As the nature of entrepreneurship is to exploit the opportunity differently in better ways to extract the best outcomes of product or services and delivers to the society and earns profit..

Similarly, "Entrepreneurs, as innovators, are people who create new combinations of natural raw materials, physical and mental labour and capital (money) and then present them to the market for assessment by consumers" (Wickham, 2006, p.237). So we can also say that entrepreneurship and innovation can be viewed as different sides of the same coin. "The adoption of innovations is conceived to encompass the generation, development, and implementation of new ideas or behaviors" (Damanpour, 1991). An innovation can be a new product or service, a new production process, new technology, a new structure or administrative system, or a new plan or program. Thus, "innovation is defined as adoption of an internally generated or purchased device, system, policy, program, process, product, or service that is new to the adopting organization" (Damanpour & Evan, 1984).

Among numerous classifications of types of innovation, one of the most commonly accepted is that of the OECD (2005) in the Oslo Manual, which distinguishes four types of innovation:

a) Product Innovation
b) Process Innovation
c) Marketing Innovation
d) Organizational Innovation

Although, the study of all these areas of innovation are very essential but my studies need to focus on few of the areas of innovation.

2.4.1 Organizational Innovation

The adoption of innovations is conceived to encompass the generation, development, and implementation of new ideas or behaviors. The adoption of innovation is generally intended to contribute to the performance or effectiveness of the adopting organization. Innovation is a means of changing an organization, whether as a response to changes in its internal or external environment or as a preemptive action taken to influence an environment. "Organizational innovation is the introduction of new organizational methods for business management in the workplace and/or in the relationship between a company and external agents" (OECD, 2005). Similarly Hamel (2006, p.74) explains that organizational innovation represents one of the most important and sustainable sources of competitive advantage for firms because of its context-specific nature. The business environment is always changing depending upon the nature of the market. Changes are inevitable in nature. The requirement of continuous new ideas in a business helps it to sustain in the changing environment of market. Likewise, "The feature that distinguishes Organizational Innovation from other organizational changes is the implementation of an organizational method that has not been used before in the firm and that is the result of strategic management decisions" (OECD, 2005). Therefore, the OECD (2005) considers that organizational Innovation in business practice involves the implementation of new methods for organizing routines and procedures, such as establishing databases of best practice, improving worker retention, or introducing management systems. Within the business firm, change in organizational structure can not only provide freshness in the working environment but also helps to identify the new ideas which can be innovative enough to overcome the threat of change

in external environment. Crossan and Apaydin (2009) explain that within the firm's environment, managers can build structure and system that would enable innovation within the firm.

2.4.2 Type of Organizational innovation

"Past research has argued that distinguishing types of innovation is necessary for understanding organizations' adoption behavior and identifying the determinants of innovation in them" (Knight, 1967). "Among numerous types of organizational innovation, three have gained the most attention" (Damanpour, 1991).

2.4.2.1 Administrative and Technological innovation

'The distinction between administrative and technical innovations is important because it relates to a more general distinction between social structure and technology' (Evan, 1966). "Administrative and technical innovations imply potentially different decision-making processes" (Daft, 1978). "Technical innovations pertain to products, services, and production process technology; they are related to basic work activities and can concern either product or process" (Damanpour & Evan, 1984). "Administrative innovations involve organizational structure and administrative processes; they are indirectly related to the basic work activities of an organization and are more directly related to its management" (Damanpour & Evan, 1984). "The adoption of administrative and technical innovations does not re- late equally to the same predictor variables" (Aiken et al., 1980). "In the "dual-core model" of organizational innovation, low professionalism, high formalization, and high centralization facilitate administrative innovations, and the inverse conditions facilitate technical innovations" (Daft, 1978, p.206).

2.4.2.2 Product and Process innovation

"The rates of adoption of product and process innovations are different during the stages of the development of a business" (Utterback & Abernathy, 1975). "Firms also differ in their emphases

on product or process innovation for providing competitive advantages" (Ettlie, 1983; Hull, Hage, & Azumi, 1985). "Product innovations are new products or services introduced to meet an external user or market need, and process innovations are new elements introduced into an organization's production or service operations-input materials, task specifications, work and information flow mechanisms, and equipment used to produce a product or render a service" (Knight, 1967; Utterback & Abernathy, 1975). Therefore, the innovation in product or process according to the nature of the circumstances helps organization to reach their goal and hence allows them to compete in the competitive market.

2.4.2.3 Radical and incremental innovation

"The adoption of innovation creates changes in the structure and functioning of an organization; however, the extent of these changes is not equal for all innovations" (Damanpour, 1991). Thus, innovations can be allocated according to the degrees of change which they make in the organization. According to Klaus et al. (1999, p.65) explains that "there are various categories of innovation radicalness; which are given by Normann (1971) distinguished "variation" and "reorientation," Nord and Tucker (1987) separated "routine" and "radical" innovations, and Grossman (1970) distinguished "ultimate" and "instrumental" innovations". "Reorientation and non routine and ultimate innovations are radical innovations that produce fundamental changes in the activities of an organization and represent clear departures from existing practices, and variation and routine and instrumental innovations are incremental innovations that result in little departure from existing practices" (Dewar & Dutton, 1986; Ettlie et al., 1984).

"The importance of the distinction between radical and incremental innovations also lies in the probable differential contribution of the two types to the effectiveness of an adopting organization" (Damanpour, 1991). For example, "in the manufacturing sector in the 1960s and 1970s, the success of Japanese companies could in part be associated with the introduction of incremental innovations, whereas the success of American companies could be associated with the introduction of radical innovations" (Hull et al., 1985). Thus an identification of innovative approach towards utilizing the free resources like waste could be pivotal steps for social entrepreneurs of developing nation like Nepal which will helps them to strengthen the countries'

economies. However, the process does not end only with the identification of best innovation in the entrepreneurial process. The studies of the external environment are also equally important for the social entrepreneurs to establish a new venture in the new environment. The study of institutional factor enlightens the factors of initiating the new project, venture. The detail study of external institutional factors are studied in the next heading entrepreneurial process framework.

2.5 Entrepreneurial Process Framework

In order to understand the entire entrepreneurial process framework, there should be a basic knowledge of entrepreneurial process. Venkataraman, (1997) have explained that the field of entrepreneurship as "the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited". In this framework, the process of entrepreneurship begins when there is a possibility of a situation in which resources can be changed and combined in a different manner thus resulting surplus over costs, or profits. After recognition of opportunities, intended individual discover these opportunities and evaluates and analyze their circumstances whether they wish to become an entrepreneurs or not, so that they can attempt to exploit that opportunities. Thus, "the entrepreneur must acquire resources, develop strategies and design organizations to successfully exploit that opportunity through the successful creation and management of a new venture" (Shane, 2003, p.10).

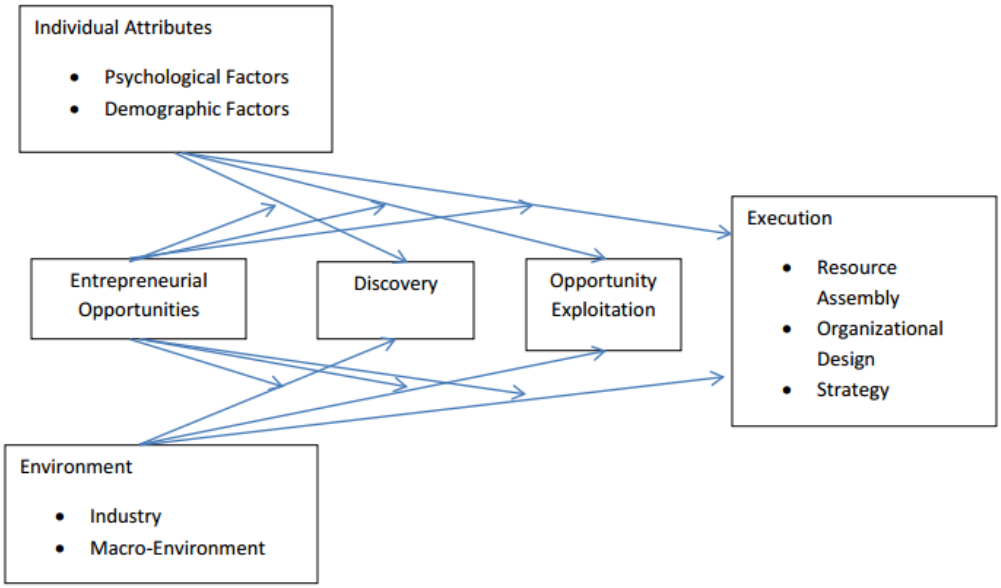

Figure 2: A model of the entrepreneurial process (Shane, 2005 p.11)

The figure explains that the individual and environmental factor influences the entrepreneurial decision making to exploit the available opportunity. According to Shane (2003, p.11), the available opportunity can be exploited by utilizing the resources and organizational team work. The influencing factor like individual attributes and environment plays a vital role for entrepreneur to take a decision whether to exploit the opportunity or not. Further explanation of entrepreneurial intention and affect of institutional factor are given in another paragraph.

2.5.1 Institutional Framework

The study of institutional framework in this research paper is to understand the environmental factors affecting the business initiation and to. It also provides the knowledge regarding the basis barriers to entry in the market for the entrepreneurs. In order to understand the institutional framework for the entrepreneurship we must first understand the institution at first. As defined by North (1991, p.97) explains that the institutional framework consists of both informal constraints (sanctions, taboos, customs, traditions, and codes of conduct), and formal rules (constitutions, laws, property rights).

Organization has always been affected by the institutional framework. The nature of business has been varies with the difference in institutional framework of the particular market of particular region. In the market, the requirement of product and services is always influenced by the nature of the society, characteristics of the people living in such market, their earnings and similarly, the government policies who allow such products and services to be produced or deliver. "Institutional theory as theoretical approach of management studies shows that institutional theory identifies internal and external environmental factors as institutional factors (economic constraints, competition; copying best practice from others, accounting standards/financial legislation, socio economic-political institutions' pressure, professional, top management / corporate culture, organizational strategic orientation and organizational characteristics), according to which the behaviour of an organization could be disclosed and researched" (Hussain & Hoque, 2002). According to North (1990), he distinguishes between two types of institutions: formal (laws, constitutions, regulations, etc.) and informal (traditions, attitudes, culture, etc.). Furthermore, Similarly, according to Schumpeterian explained by Shane (2003, p.23) analyzes that the change in political and regulatory, technological changes and social and demographic change helps to shape the organization intention to exploit the opportunity As both formal and informal institutional factor is necessary to study for the entrepreneurial process of identifying the opportunity, this paper will only limited to formal institutional framework which is also known as external institutional framework.

According to Gartner (1985), he explains that the external environment as a key influencing factor in the process of new firm foundation. Similarly, "the formal factors, the most relevant studies deal with governmental policies" (Urbano et al., 2010). Government policies and legal framework has always restricted an entrepreneurship process in a particular market in particular region. "The government functions primarily as a coercive factor by constructing the legal, political, and regulatory foundation that constrains and permits" (Daniel et al., 2012). Political agendas and ideologies can either restrict the business to participate in the market or helps entrepreneurs to flourish their business. According to Shane (2003, p.26) "the political change is a source of entrepreneurial opportunity". In the process of new venture formation in a particular market, there are many political risks associated which can determine that business can be successful or not in the particular market. For an example, in selective market of particular

region of the world, all the business is carried out by the government bodies. In such market, the government policies for providing all the necessary things for the human life in a subsidize price can hinder entrepreneurial activities in that market. As the privately owned enterprises need to compete with the public companies the competitive advantages goes to government sector because of the lower cost.

However in some region government policies can also promote the entrepreneurial business. Change in plans and legal framework in the business market can motivate private sector and also enable them to earn profit. Shane (2003, p.23) further explains that "the introduce changes alters the value of resources, thus upsetting the equilibrium price of resources and creating the potential for entrepreneurial profit." The ideas for exploiting the available resources can change the plans and policies made by the government. The changes of policies can attract certain group of investors and entrepreneurs, who then subsequently utilize the opportunity and hence increase their wealth and grow their market. The affect of policies in the firm persuasion on opportunity exploitation given by Storey (1994) was further studied by Fuduric (2008) and explains that "Policies have the distinction of either improving the financial conditions of the firm or improving the operating efficiency of the firm". Since change in plan and policies also means government focus towards certain element of development or market. Thus the government entities also require resources to make the policies success which enable entrepreneurial activity in providing such needed resources to government. This business can further help entrepreneurs to establish in the market. "Research has shown that government supplied entrepreneurial services help most in initiating and stabilizing a business but does very little for the growth of businesses" (Bosma & Harding, 2006).

Likewise, the government's policies regarding starting a new venture are rigorous and complicated then it also affect the entrepreneurial process of exploiting identified opportunities. As studied by Fuduric (2008) in (Verheul et al., 2001) explains that the costs can have the effect of putting too great a burden on the entrepreneur's willingness to take the risk of starting a new business. Similarly, (Verheul et al., 2001) studied by Fuduric (2008) explains that start-up requirements can have a positive impact on the level of entrepreneurship in the long run because they can contribute to a higher quality of entrepreneurship and a higher business survival rate

the unsettled government activities will also affect the current entrepreneurial activities and also influence the entrepreneurial investment decisions in the particular market. However, "entrepreneurship can be discouraged if policies exist which severely restrict the ability of a firm to close or restructure" (OECD, 2000).

The study of entrepreneurial framework in environmental institution provides the basic requirement of the market in which entrepreneurs can successfully establish their new venture or mobilizes their existing venture. The government policies have both positive and negative effects in the firm. Although the market might consists of attractive opportunity but the deep understanding of the nature of market and government regulation in the market should be accumulated before intending to initiating business in the market.

2.6 Entrepreneurship vs. Social Entrepreneurship

From the above paragraph of introduction to entrepreneurship, in summary what we understand is that the entrepreneurship is the process in which innovative opportunities are identified and by the help of resources and organizing team, the entrepreneurs exploit the opportunities and earn profit. Similarly, the social entrepreneurship has also the similar definition like entrepreneurship but they focuses on social value creation instead of only earning profits. "Social Entrepreneurship involves the recognition, evaluation and exploitation of opportunities that result in social value- the basic and long standing needs of society as opposed to personal or shareholders wealth" (Austin, Steverson & Wei-Skiller, 2006). Although the definition of social entrepreneurship is quiet similar to the classical entrepreneurship, there has been huge confusion on the concrete definition of social entrepreneurship. "Despite increased interest in social entrepreneurship, scholarly research has been challenging" (Short et al., 2009). Because definition of social entrepreneurship have been developed in a number of different domains, such as not-for-profit, for-profits, the public sector, and combinations of all three, a unified definition has yet to emerge (Christie and Honig, 2006). Some definition explains social entrepreneurship to non-profit organizations (Lasprogata and Cotton, 2003). Likewise "social entrepreneurship as for profit companies operated by nonprofit organizations" (Wallace, 1999) and similarly Baron (2007) explains that social entrepreneurial business are created at a financial loss. Similarly, it

has also been explained to philanthropy (Ostrander, 2007). Besides that it has also been described as social entrepreneurship to individuals or organizations engaged in entrepreneurial activities with a social goal (Certo and Miller, 2008). Therefore before begin to introduce social entrepreneurship we must try to understand the difference of social entrepreneurship and classical entrepreneurship. The differences of social entrepreneurship and classical entrepreneurship are given below by Wickham, (2006 p.184).

S. No	**Issues**	**Pure 'Classic' Entrepreneur**	**Pure 'Social' Entrepreneur**
1	Personal Motivation	Maximize personal wealth	Maximization of social value
2	Sector of activity	Commercial	Not-for-profit/public
3	Organizational form created	Traditional business hierarchy with entrepreneur taking leadership role	Non-traditional organizational form with an emphasis on egalitarianism rather than efficiency
4	Strategies adopted	Focused on competition and maximizing return to entrepreneur/investors	Avoid competition; focused on creating and delivering social value
5	Definition of and relationship with, stakeholders	Relationship with investors considered critical; relationship with customers seen as means to end	Stakeholders defined over wide and broadly defined groups
6	Interaction with wider social environment	Aspires to no wider social legitimacy	Seeks broad based social legitimacy with wide group of parties
7	Ethical reflections	Self-interested; not altruistic. Ethically neutral or unethical?	Altruistic at expense of self-interest

Table 1: Distinguishing the social entrepreneur from the commercial entrepreneur (Wickham, 2006 p.184)

2.7 Social Entrepreneurship

"The rise of social entrepreneurship can be seen as the leading edge of a remarkable development that has occurred across the world over the past three decades: the emergence of millions of new citizen organization" (Bornstein, 2007 p. 3-4). "Social entrepreneurship, although not a new concept, has gained increasing attention recently, both in the literature as well as in the media" (Thompson, Alvy, & Lees, 2000). "The increasing awareness in recent decades of the potential contribution of social entrepreneurship in the economy and society is hardly surprising in view of the growing number of social ventures all over the world as nonprofit movements" (Nicholls, 2008; Robinson et al. 2009). "The concept of social entrepreneurship appears to have been attracting a lot of attention recently, however, it has existed for quite some time with differing initiatives in an attempt to address social problems" (Thompson et al., 2000). "This can be attributed to the assumed potential of social entrepreneurs to address persistent social problems, and enrich communities and societies by adopting innovative strategies and creative solutions" (Zahra, et al, 2009). "The initiatives have differed in the nature of the actions being represented by programs and interventions, charities and donations, but have not proved to be effective in terms of addressing the social problems in a sustainable way" (Alvord et al., 2004). Similarly, "social entrepreneurship is an emerging field that offers opportunity to young professional to create societal and economic value on a sustainable basis" (Madhukar, 2008)

"Research evidence suggest that in developing countries entrepreneurial actions can lead to both economic and social goals by reducing poverty and improving social indicators such as health and well-being, education, and self reliance" Patzelt & Shepherd, 2010). "The concept of social entrepreneurship has been rapidly emerging in the private, public and non-profit sectors over the last few years, and interest in social entrepreneurship continues to grow" (Nicholls, 2008). Furthermore, in the environmental context of financial limitations, bureaucracy, and inflexibility of the market (common in developing countries) market opportunities fail to attract mainstream entrepreneurs, however, "in these conditions, social enterprises perform a residual function and are instrumental in garnering resources and capitalizing submarket opportunities." Austin et al

(2006) also argue that market failure creates differing entrepreneurial opportunities for social entrepreneurship. Thus provides favorable environment for social entrepreneurs to up rise.

Among the various definition of social entrepreneurship given by different scholars I am only focusing towards Zahra et al (2009) definition about social entrepreneurship in which he explained that "Social entrepreneurship encompasses the activities and processes undertaken to discover, define and exploit opportunities so as to enhance social welfare by creating new venture or managing existing organization in a innovative manner". The recent interest in social entrepreneurship can also be explained by the fact that social entrepreneurs recognize opportunities in innovative ways and "their intended outcomes occupy a wide range of types (e.g., reducing poverty, promoting education, or feeding t hungry) compared to traditional entrepreneurs" (Murphy & Coombes, 2009, p. 333).

From the definition provided by Zahra et al (2009) and Murphy & Coombes (2009, p.333), social entrepreneurship what we can understand that it is the process of forming a business or organizing an existing business through innovativeness in their process, plan, goal etc, for the purpose of exploiting the opportunity with the help of available resources and enhances the society by its creative work. This also means that the social entrepreneurs prioritize more often to the social problem and its solution rather than some bulk of cash or profit. They always try to find out what are the necessities of general people, their requirements, etc. According to Zahra, in his article "A topology of social entrepreneurs" he describes total wealth is the summation of Economic wealth (Profit) and social wealth (Prestige). Total Wealth = Economic wealth + Social wealth.

Social entrepreneurs, through their innovative and creative strategies, are transforming social problems in developing countries into manageable problems (Seelos & Mair, 2005). Murphy and Coombs (2009, p.332) explains that "social entrepreneurial discoveries allow economic, social and environmental resources to reinforce one another in novel ways". "Whether they grew out of business opportunities or social needs, and fulfil their economic tasks, entrepreneurial organizations increase employment and enhance societal well-being" (Wennekers et al. 2005). Similarly, Azmat (2013) describes "in addition, their unique and innovative strategies also have

the potential to achieve economic and social development with environmental sustainability thus leading to sustainable development"

The recognition of opportunity and its exploitation from the social perspective is more towards the increase in social value in the society "Social entrepreneurship as the use of entrepreneurial behavior for social ends rather than for profit objectives or, alternatively, generating profits form market activities that are used for the benefit of a specific disadvantaged group" (Leadbetter, 1997, p.). The nature of social entrepreneurial behavior is often carried out by government business. The government business are mostly initiated to help the society by selling the product or services in a subsidize price. Austin, Stevenson, & Wei-Skillern (2006, p.2) further explains that social entrepreneurship as "innovative, social value creating activity that can occur within or across the non-profit, business, or government sectors". Similarly, in every process of business, innovation plays an important role. Likewise, in social entrepreneurship process, the innovation process is carried out more towards improving the social as well as economic value rather than only focusing on economic value. "Social entrepreneurs, like other entrepreneurs, also create value through innovation and creativity, however, they differ from business entrepreneurs as they focus on both social and economic goals rather than just economic goals" (Azmat, 2013). In order to understand the social entrepreneurship in a particular market, there should be market analysis before social entrepreneur's intent to organize their business or to solve the societal problem. As my research only studies the external environmental factors for the social entrepreneurial business in a particular market, so I am only studying formal institutional factors which is explained in next topic.

2.8 **Formal Institutional factors**

The formal institutional factors should be studied before any entrepreneurs move towards the opportunity exploitation. The formal institutional factors helps entrepreneurs to understand the market scenario, government supports, people enthuse about the product or services etc. It also help organize to re module its product or services, similarly with their strategies as well. Urbano et al. (2010) suggest that "institutional factors are very important to the emergence and

implementation of social actions". Furthermore, Urbano et al. (2010) also explains that social entrepreneurs typically address areas of unsatisfied social needs or the creation of new social opportunities that the public or private sectors have failed to address. Many researchers found that the propensity for social entrepreneur wanting to solve the social problem by initiating new business formation is differ from industry to industry. "Thereby, social opportunities and institutional factor are related" (Zahra et al. 2008). Likewise, North (1990 and 2005) has argued that institutions determine the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. "Institutional approach is considered an appropriate theoretical framework for the analysis of the environmental factors that affect the creation of new social enterprises" (Nicholls ,2010). The group of formal institutions given by North (1990) presented by Urbano and Ferri (2010) are public spending, access to finance, and governance

1. Public Spending

"The decline in spending by governments to safeguard the welfare state has alerted many investigators to its importance in the context of social entrepreneurship" (Alvord et al. 2004). Government policies has always influence the public venture that provides public goods for the local people. The change in government through changing in political parties in the top of the hierarchy has always affected the policy of business depending upon their ideologies in the country. If a government policy supports the business ideas and provides a favorable goods or services to the society to fulfill their needs than it will be very hard for a social venture to establish in that particular area as social venture fails to compete with them. But in case a government policy doesn't support the business than there can be a number of social entrepreneurship coming forward to solve the social demand of the society. Thus there is a huge influence by the public spending companies in social entrepreneurship process which truly depends upon the ideologies of the government that the country has.

2. Access to Finance

Access to finance means the possibility that individual or organization can access financial services. Limited access to finance will demoralize the private venture to participate in the local market. Moving forward with formal institution, access to finance has a positive relation with both entrepreneurship and social entrepreneurship activities. But in opposite to the access to finance, both social and entrepreneurial ventures have certain restriction in their growth. According to Mair and Marti (2006), lack of finance for the development of social capital is one of the main constraints that social entrepreneurs suffer in fulfilling their social mission. Finance is one of the main sources for every entrepreneurs need to deals with. It affects both profit motive and social motive enterprises. Social entrepreneurs need to face the financial constraints to carry out their social mission. Certo & Miller (2008) explains that on the emergence and development of social entrepreneurial activities the social entrepreneurs must cope with financial constraints in order to carry out their social mission. However some author also argue that financial constrain in the market is one of the sources for the social projects and motivates social entrepreneurs to exploit the social opportunities. From "Environmental Factors and Social entrepreneurship", Alvord et al. (2004) and Thompson and Doherty (2006) studied by Urbano and Ferri (2010), explains that there were many authors who identify that the lack of finance for development of social capital as one of the major factors that prevents the implementation of new social projects. To resolve this problem of financial constraint Urbano and Ferri (2010) suggests that the promising solutions for such financial constraints can be minimize by the help of credit. Credit is one of the ways of doing business in which goods or services goes at first and money comes after some duration. Therefore, crediting can help social entrepreneur‘s to cope with the financial risk and allow them to earn and also helps them to solve the societal problem.

3. Government Effectiveness

According to Sharir and Lerner (2006) show that laws and states are factors that influence the environment of the organizations and ultimately their social success. In many countries, both developed and developing, there has been a systematic retreat by government from the provision of public goods in the face of new political ideologies that stress citizen self-sufficiency and that

give primacy to market-driven models of welfare (Leadbeater, 1997). Further, as explained by Leadbeater (1997) "social entrepreneurs are the bridge the gap between the private and public sectors, the state and the market, to develop effective and efficient solutions to our most complex and pressing social problems". According to Cornwall (2008) studied by Urbano and Ferri (2010) has noted that in countries where the provision of social services (health, cultural, leisure and welfare) was scarce and mainly undertaken by public institutions, the emergence of social entrepreneurs is significant. Social venture are established in such circumstances where government could not help to resolve the societal need. Austin and Chu (2006) further argue that the work done by governments and social entrepreneurs is complementary, due to the public sector has been able to mobilize massive efforts in several periods, but has been unable to choose models that incorporate and maintain their efficiency and effectiveness. These inefficiencies from the government sector give rise to the social demand which can be unmeant by the social entrepreneurship. "for their part, social entrepreneurs' efforts provide efficient and effective models in performance" Urbano and Ferri (2010). However, these opportunities are also identified by private firm/ entrepreneurs but because of un natural business environment they resist themselves to enter in the market. "The benefits of entrepreneurship may be particularly important in underdeveloped regions because economic and social problems are more pressing, but governments may be hindered by corruption and lack adequate resources to address these problems" (Valente and Crane, 2010). Hence, providing opportunity to social entrepreneurs to come forward and fill the gap indeed providing solution to solve the societal problem. "Many researchers noted that social entrepreneurs typically address areas of unmet social need or new social opportunity creation that the public or private sectors have failed to address" (Certo and Miller, 2008). Often this is the most common cases in developing countries', as government is failing to implement effective policies to address the societal problems. Lack of government support to meet the societal need motivates private firm to participate. Depending upon the degree of needs and earnings of people, private organization measures their profit and their opportunity cost and establishes their ventures; however this could not be the better market for all the investors and thus allowing social entrepreneur to resolve the problem which they do by identifying the local, hidden resources. Thus ineffectiveness in government spending in the market allow social venture to come forward and further establish them in the market.

2.9 Summary

The chapter was started from the defining entrepreneurship and also explained the process of entrepreneurship to start a business. The entrepreneurs are the person, who identifies the business opportunity, gather resources, make an organizational team to exploit the identified opportunity and take a risk to earn profit. Similarly, the entrepreneurial process is the process of how an entrepreneur identifies the business opportunity and what kind of resources they needed for utilizing the opportunity. Furthermore, the entrepreneur also recruits the qualified and skilled manpower as per the requirement and change the risk into profit. In the entrepreneurship process the most demanded field is the innovation. The innovation helps the organization to deliver new product or process. The innovation could be new product or process, or new way of doing work or new process of delivering the product and services. Innovation can be achieved by adopting new technology available in the market or also adopting new strategies. The organizational innovation could be alternation in the organization structure, organizational team and in selection of new ways of doing and delivering process.

Social entrepreneurship is the process of identifying the new idea of opportunity exploitation. Here in this process, the new idea is always mean to be increase in social value and solving societal problems. Social entrepreneurship is different than pure (classical) entrepreneurship as the objective of entrepreneurs as well as entrepreneurial venture formation is different in both cases. Similarly, both entrepreneurial and social entrepreneurial process is highly influenced by entrepreneurial framework. The entrepreneurial framework consists of different factors which can influence a person to be entrepreneur or social entrepreneur. The external institutional factor is one of the prime sources for shaping business environment in the particular market. The external institutional factor can allow both entrepreneurs and social entrepreneurs to predetermine their importance in such market.

Chapter 3

Study Area

3.1 Chapter Introduction

This chapter provides the knowledge towards the development of social waste management in the early stage of development of world till the latest process of solid waste management. The chapter also provides the information regarding current waste generation in developed and developing economy. Similarly, the chapter also provides the definition of solid waste and its types with its characteristics. The paper also studies different solid waste disposition process. The importance of understanding the nature of solid waste and its final ending process is important because it enlightens the risk associated with solid waste and further explains their threat to the society.

3.2 Short history of Waste management

European society has been growing since the starting of human civilization in this planet. It is very obvious that they have been making and modifying every rule of living and surviving and hence they have been planning for clean and healthy environment to live. Early centuries to today's time, they have been improving their living place clean and healthy. According to Vehlow et al (2007), the early stage of waste management concept in European society was started from 500 B.C. Since then the waste management concept has emerged for preventing methods for different viral diseases caused by waste, but now it has been one of the major earning source for the country by producing energy via waste incarnation.

Milestones	**Key Features**
10,000 B.C.	Neolithic evolution: decomposition of organic waste on site.
2100 B.C.	First experience of waste segregation in Egypt.
81-96 A.D.	Emperor Domitian (Roman Emperor) ordered pest control due to a lack of hygiene, proliferation of rats in the City.
69-79 A.D.	Emperor Vespian imposed a urine tax to avoid urinals in public places.

6th to 14th	Epidemics claim the lives of one-third of the population (25million) in a few short years (Bilitewski et al., 1994).
15th Century	First paving of streets, introduction of garbage cans.
19th Century	Creation of the Public Health Act in England. Construction of the first incinerators in England in 1876.
1843	Introduction of the first mechanical street sweeping machine.
1850 to 1890	Breakthrough in waste management: scientist (Ignaz Semmelweß, Louis Pasteur, Robert Koch) reveal bacteria and viruses as the causes of disease.
1892	9000 people in Hamburg/Germany died due a cholera epidemic.
Mid-1960s	The Federal Government of Germany establishes the legal basis for the disposal of waste.
1970s	"Waste avalanche" due to economic growth in the post-war era.
1973/74	Oil crisis, World economic crisis, first thoughts about sustainable resources management.
1980s	First breakthrough in integrated SWM: recycling, composting and anaerobic technology are a priority for waste disposal.

Table 2: Milestones in the history of SWM
(Source: Bilitewski et al., 1994)

People were always concerned with the negativity of waste. They always try put away the waste and ignore the threat possessed by waste from their locality. They also want to maintain their area clean by dumping such unwanted product away from their residential area. The necessity for maintaining clean environment gave birth to the concept of proper treatment of waste or "Waste Management". Early in the middle age, three were massive problem for people to walk on the streets because of carelessly disposed of household waste on the streets. "Most European cities reverted to small villages, and during the Middle Ages people got rid of their waste in the way, which made walking in the streets an unpleasant activity" (Vehlow et.al., 2007). To solve these waste problems, government of the major cities decided to dump the waste outside of their cities at a certain place. In that period, dumping waste away from their city had not only solved their problem of the house but it had also helped them to defend their city from their enemies at the

time of war. “In 1400, garbage piled up so high in front of the Paris city gates that it interfered with the defense of the city” (Vehlow et al., 2007).

However, it took a long era to understand the actual benefit of Waste. The milestone of waste management from the above table shows that development of sustainable energy was just a new chapter in history of waste. Late in 18th century, the first incinerator for the waste was started in Hamburg, Germany. The purpose of building waste incineration on that date was to prevent people from viral diseases like cholera epidemic. The incineration process became very popular all over the Europe and on the same duration the Denmark waste incineration plant was very successful among other European plant, as it had not only helps to reduce the waste but it had successfully produces energy from such waste which was transferred to the near hospital as electricity and heat. That was the major successful extraction of energy from waste which was recorded at the first time. Since, from the beginning of 19th century, almost all the wealthiest nations continue to follow waste to energy recovery concept. By far it has been one of the interesting and reliable sources for nation development and also an incoming source for the country.

3.3 Current situation of solid waste management

3.2.1.1 Current solid waste generation

“At present almost 1.3 billion tonnes of MSW are generated globally every year, or 1.2 kg/capita/day” (UNEP, 2013). According to UNEP (2010, p.14), Bogner et al. (2008) explains that “Waste generation rates have been positively correlated to per capita energy consumption, GDP and final private consumption”. “Waste generation and waste composition varies between and also within countries, primarily due to differences in population, urbanisation and affluence” (UNEP, 2010). “Europe and the United States are the main producers of MSW in absolute terms” (Lacoste & Chalmin, 2006). “Every year, an estimated 1.3 billion tonnes of solid waste is collected worldwide. This figure is expected to increase to 2.2 billion tonnes by 2025, with almost all of the increase from developing countries” (Hoornweg & Tata, 2012.). According to Imura, et. al. (2005), high population growth and urbanization coupled with rapid economic growth greatly accelerates consumption rates in Asian developing cities. “Asian countries

comprise of developed as well as developing economies" (Othman et al., 2013). "Over the past 50 years, many Asian countries have experienced remarkably rapid economic development and social change, and this has significantly influenced urban life" (Shekdar, 2009). "Today, more than 50 percent of the world's population lives in cities, and the rate of urbanization is increasing quickly" (Hoornweg & Tata, 2012).

Activity	Low income	High income
Source Reduction	No organized programs, but reuse and low per capita waste generation rates are common.	Organized education programs emphasize the three 'R's' –reduce, reuse and recycle. More producer responsibility & focus on product design.
Composting	Rarely undertaken formally even though the waste steam has a high percentage of organic material. Markets for, and awareness of, compost lacking.	Becoming more popular at both backyard and large scale facilities. Waste stream has a smaller portion of compostable than low scale and middle-income countries. More source segregation makes composting easier. Anaerobic digestion increasing in popularity. Odor control critical
Incineration	Not common, and generally not successful because of high capital, technical, and operation costs, high moisture content in the waste, and high percentage of inert	Prevalent in areas with high land costs and low availability of land (e.g. islands). Most incinerators have some form of environmental controls and some type of energy recovery system. Governments regulated and monitor emissions. About three (or more) times the cost of land filling per tons.
Land filling/ Dumping	Low technology sites usually open dumping of wastes. High polluting to nearby aquifers, water bodies, settlements. Often receive medical waste. Waste regularly burned	Sanitary landfills with a combination of liners, leak detection, leach ate collection systems, and gas collection and treatment systems. Often problematic to open new landfills due to concern of neighboring

	significant health impacts on local residents and workers.	residents. Post closure use of sites increasingly important, e.g. golf courses and parks
Costs	Collection costs represent 80 to 90% of the municipal solid waste management budget. Waste fees are regulated by some local governments, but the fee collection system is inefficient. Only a small proportion of budget is allocated toward disposal	Collection costs can represent less than 10% of the budget. Large budget allocations to intermediate waste treatment facilities. Up front community participation reduces costs and increases options available to waste planners (e.g. recycling and compositing).

Table 3: Comparison of solid waste management practices by income level (Hoornweg & Tata, 2012)

From above table of comparison of solid waste management practices by income level, it shows the level of solid waste management practices in different region according to their income capacity. The treatment of waste varies with the country's economy. Higher the economics of country, higher will be the waste management process. Asian society consist all kind of economics which is high, medium and low level. For an example Japan, Hongkong, South Korea etc have a developed economies structure. China, Srilanka, Indonesia and India has rapidly growing economy and Nepal, Bhutan, Myanmar, Bangladesh etc have low economic growth.

"Cities and/or municipalities in high-income member countries are increasingly becoming comparable to that of western countries in terms of quality and quantity of waste generation. Developed countries generate more that 1 kilogram of solid waste per capita per day while developing countries is about half of that generation"(Hoornweg & Tata, 2012). Similarly, Hoornweg & Tata, (2012) also explains the rate of change in consumer habit and waste production is due to city urbanization. "As standards of living and disposable incomes increase, consumption of goods and services increases, which results in a corresponding increase in the amount of waste generated" (Hoornweg & Tata, 2012). Increase in urbanization and rapid

economic growth has affected the consuming habit of people. Increase in consumption capacity has increases the rate of waste generation as well. Thus increase in urbanization has not only increases the population movement but it has also increases the problem of waste in locality.

"By 2015, of the world's 30 largest urban agglomerations, 18 will be in Asia, six in Latin America, three in Africa, and three in the rest of the world" (Cohen, 2004). Similarly, there will be massive shift in population concentrating in major cities of Asia. "By 2030, 54% of Asia's population (around 2.7 billion people) is expected to be in urban areas" (Cohen, 2004). Out of ten, six of the world's top most populous countries are in Asia and they are China, India, Indonesia, Pakistan, Bangladesh and Japan. "The annual waste generation in East Asia and the Pacific Region is approximately 270 million tones per year" (Hoornweg & Tata, 2012). Whereas, Hoornweg & Tata (2012) also argues that "In Eastern and Central Asia, the waste generated per year is at least 93 million tonnes." "Urban areas in Asia produced approximately 760,000 tons of municipal solid waste per day in 1998, which is expected to rise to 1.8 million tons by 2025. Local governments spent about US$25 billion for managing this waste in 1998 and this amount is expected to double by 2025" (Mongkolnchaiarunya, 2005)."This massive urbanization is already straining almost every urban service and is expected to require substantial investment" (Mohan and Dasgupta, 2003).

3.2.1.2 Current solid waste collection

According to the Hoornweg & Tata (2012) report on "What a waste?" explains that waste collection is the collection of solid waste from point of production (residential, industrial commercial institutional) to the point of treatment or disposal. It is one of the important aspects of maintaining public health in urban areas. Lack of proper management in waste collection process can fail the entire Solid waste management process in the city. The problem of collecting waste is high in low income countries rather than higher income countries. "Collection rates range from a low of 41% in low-income countries to high of 98% in high – income countries" (UDSK, 2012). "Frequency of collection is an important aspect readily under a municipality's control. From a health perspective, no more than weekly collection is needed. However in some

cities, largely because of culture and habituation, three-times per day residential collection is offered (e.g. Shanghai)" (UNEP 2010)

After the collection of entire waste from House, Community Bins, factories, etc., these collected MSW are separated or mixed depending on local regulations. According to Hoornweg & Tata (2012), generators can be required to separate their waste at source, e.g., into "wet" (food waste, organic matter) and "dry" (recyclables), and possibly a third stream of "waste," or residue. Depending upon the level of separation, the un-segregated wastes are also further separated into organic or recycling streams. But it is not 100% separated waste, there are still some leftovers. These leftovers are separated out so that it does not mix with other processing wastes. " 'Separation' can be a misnomer as waste is not actually separated but rather is placed out for collection in separate containers without first being 'mixed' together" (UNEP 2010).

The average waste collection rates are directly related to income levels. "Low-income countries have low collection rates, around 41%, while high-income countries have higher collection rates averaging 98%"

Figure 3: Waste collection rates by Income level (Hoornweg & Tata, 2012)

The figure explains the average collection percentage by income. The data shows that the average rate of collection of waste are directly related to the income of the country. The higher

the economy of the country higher will be the rate of collection of solid waste and similarly in lower income level the average rate of collection is reverse.

3.2.1.3 Current solid waste composition

Waste composition generally means the mixture of different wastes while collecting for a waste management process. "Waste composition categorized as organic, paper, plastic, glass, metals, and 'other'" (Hoornweg & Tata, 2012). It is highly influence by the factors such as economic development, climate, culture, energy sources. "Although waste composition is usually provided by weight, as a country's affluence increases, waste volume tend to be more important, especially with regard to collection: organics and inerts generally decrease in relative terms, while increasing paper and plastic increases overall waste volumes"(Hoornweg & Tata, 2012). The MSW consist mainly two types of waste, organic waste and inorganic waste. "Paper, plastics, and other inorganic materials make up the highest proportion of MSW in high income countries" (Hoornweg & Tata, 2012). Similarly Hoornweg & Tata (2012), claims that Low-income countries consists of highest proportion of organic waste. In some of the cities the waste generated out from the construction and demolition of building rubble, concrete and masonry leads to increase the MSW. "In some cities this can represent as much as 40% of the total waste stream" (Hoornweg & Tata, 2012).

Type	Sources
Organic	Food scraps, yard (leaves, grass, brush) waste, wood, process residues
Paper	Paper scraps, cardboard, newspapers, magazines, bags, boxes, wrapping paper, telephone books, shredded paper, paper beverage cups. Strictly speaking paper is organic but unless it is contaminated by food residue, paper is not classified as organic
Plastic	Bottles, packing, containers, bags, lids, cups
Glass	Bottles, broken glassware, light bulbs, colored glass
Metal	Cans, foil, tins, non-hazardous aerosol cans, appliances(white goods), railing, bicycles

Other	Textiles, leather, rubber, multi-laminates, e-waste, appliances, ash other inert materials

Table 4: Types of waste and their source (Hoornweg & Tata, 2012)

The figure explains different types of waste and their sources. These types of waste are highly influence by different factors. "Waste composition is influenced by many factors, such as level of economic development, cultural norms, geographical location, energy sources, and climate" (Hoornweg & Tata, 2012). When countries economy gets better and better, the consumption habit of people also changes. The increase in per capital income gives capability to buy different products. The shift towards prioritizing inorganic material increases as urban population becomes wealthier.

"As a country urbanizes and populations become wealthier, consumption of inorganic materials (such as plastics, paper, and aluminum) increases, while the relative organic fraction decreases" (Hoornweg & Tata, 2012). Similarly Hoornweg & Tata (2012), also urge that low- and middle-income countries have a high percentage of organic matter in the urban waste stream, ranging from 40 to 85% of the total.

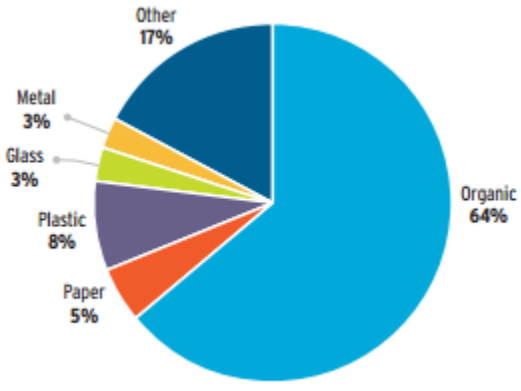

Figure 4. Waste composition in Low-income countries (Hoornweg & Tata, 2012

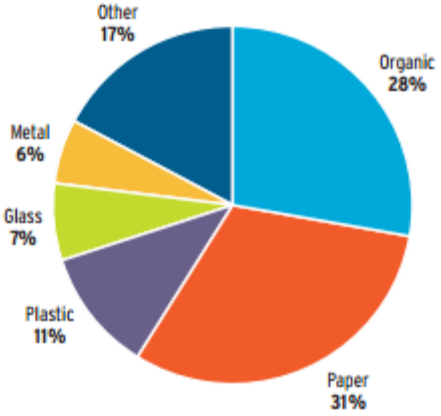

Figure 5. Waste composition in High-income countries (Hoornweg & Tata, 2012).

"The organic fraction tends to be highest in low-income countries and lowest in high-income countries" (Hoornweg & Tata, 2012). Similarly Hoornweg & Tata (2012), also explain that Low-income countries have an organic fraction of 64% compared to 28% in high-income countries.

3.2.1.4 Current solid waste disposal

Hoornweg & Tata (2012) argues that "many countries do not collect waste disposal data at the national level, making comparisons across income levels and regions difficult." The data for the waste disposal are hard to collect in most of the nation. Furthermore, the available data also have difficulties in calculation and often categories as either not known or not consistent. "For example, some countries only give the percentage of waste that is dumped or sent to a landfill, the rest falls under 'other' disposal" (Hoornweg & Tata, 2012). Similarly, compostable and recyclable materials are selected out before the waste reaches to the final disposal site and often not included in waste disposal statistics. "Land-filling and thermal treatment of waste are the most common methods of MSW disposal in high- income countries" (Hoornweg & Tata, 2012). "Several middle-income countries have poorly operated landfills; disposal should likely be classified as controlled dumping" (Hoornweg & Tata, 2012).

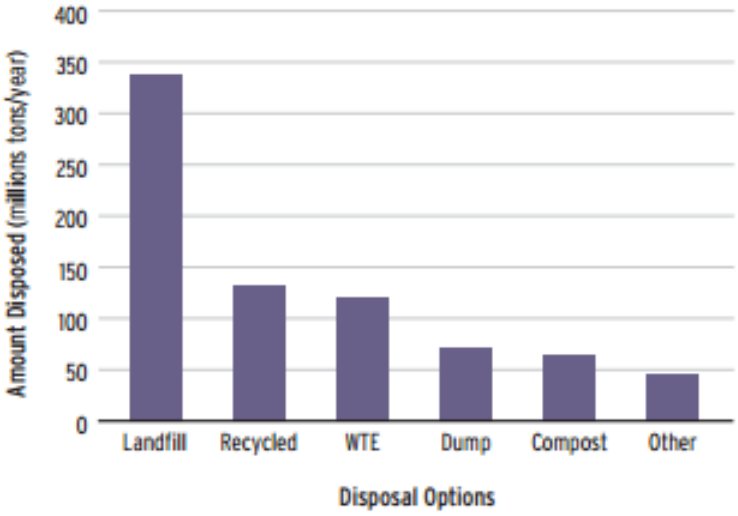

Figure 6: Total MSW disposed of worldwide (Hoornweg & Tata, 2012)

The figure shows the current annual global MSW disposal for the entire world. "These are only approximate values, given that the data is from various years" (Hoornweg & Tata, 2012)

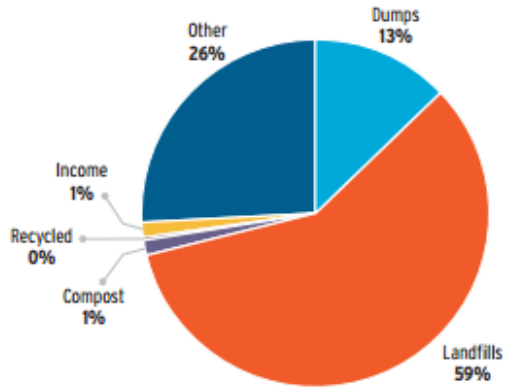

Figure 7: Low-Income Countries Waste Disposal (Hoornweg & Tata, 2012)

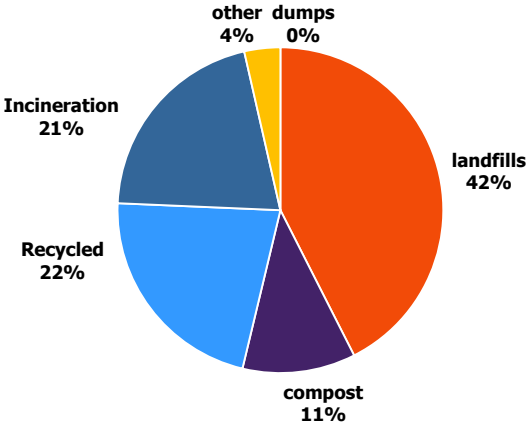

Figure 8: High- Income Countries Waste Disposal (Hoornweg & Tata, 2012)

The above figure explains the waste disposal methods in Low-income and High- Income countries. In this figure, both low-income and high-income countries follow land-filling process to dispose their generated waste. There are only 1% percentage of low-income countries which are undertaking the advance technological help to dispose the collected waste, whereas, in high-income countries, the percentage is 21%. This shows that developed countries not only dispose their waste systematically, but they also earn from such unwanted materials.

3.4 Introduction to solid waste management

According to Borongan and Okumura (2010, p.2) "The main problems of municipalities in solid waste management include the sharp increase in the accumulation of waste and its management, use of open dumps that create and spread health problems, contamination of underground water resources and the decreasing capacity of sanitary landfills along with the difficulties in establishing new dumpsites and the rising costs of wastes disposal". Similarly, Seelos and Mair (2005) explain that industrialization and urbanization lead to environmental degradation through waste and pollution, thus compromising intergenerational justice for future generations. These definitions resembles that solid waste is a burning problem for municipalities which is due to the increase in population and their behavior of generating un-use materials. Before concluding it is a general problem to the people, we must understand what actually solid waste means and its

characteristics. The next headlines will provide some of the definition and nature of solid waste and also explains why it is necessary to manage in the society.

3.4. 1 Solid Waste

Waste is defined as a by- product of human activities. It is invariably refers to lack of use of value, or useless remains. "Physically, it contains the same materials as are found in useful products; it only differs from useful production by its lack of value" (McDougall et al., 2001.p.1). The waste is also commonly known as "Garbage" which is often comes out from our house, garden, office, school, restaurants, hotels, streets etc. "Solid waste includes all domestic refuse and non-hazardous wastes such as commercial and institutional wastes, street sweepings and construction debris. In some countries the SWM system also handles human wastes such as night-soil, ashes from incinerators, septic tank sludge and sludge from sewage treatment plants. If these wastes manifest hazardous characteristics, they should be treated as hazardous wastes" (UNEP, 2005).

The unwanted household and commercial un- useable items or byproduct which is non productive for the current processing but might be taken for reusing and can be utilize it in the same form or converting into another form are said to be solid waste. These solid unwanted products are at first collected from every household, business house, industries etc and stored in a safe and secured place far from residential area, which can be separated and processed for transforming to their original product or to produce energy or to produce organic fertilizers. It is not necessary that all the waste can transform into the above things, some waste are thus cannot be use, cannot be remake and cannot be transform into energy or other product, and such wastes are then burned or buried down inside earth to end its life cycle. The unplanned and un-organized settlement of solid waste can cause land pollution, air pollution, water pollution, etc. it can also cause natural disaster which can degrade earth's environment .Similarly it also decreases the natural beauty of landscape whereas a community might lose their probable tourist customer who often comes to visit their beauty, which means the local people might be losing their earnings in one hand and in another hand the community might need to take extra care for managing the growing waste problem in order to improve their status. If they do not take the

right decision at the right time then they might spend a lot of money to get rid out of such problems.

Similarly, besides earth's environment these unwanted residuals can also cause serious health problems to the local people living and sharing the same society. In the report of UNEP (2005), "studies have shown that a high percentage of workers who handle refuse, and of individuals who live near or on disposal sites, are infected with gastrointestinal parasites, worms, and related organisms" (Cal Recovery Systems, 1982). These un- managed wastes when left out in an open area for a long time can allows different bacteria to grow within it, which when exposed in an open area then it can contaminate air and water and can infect human being or other animals. As UNEP (2005) explains "although it is certain that vector insects and rodents can transmit various pathogenic agents (amoebic and bacillary dysenteries, typhoid fever, salmonellosis, various parasitoses, cholera, yellow fever, plague, and others), it often is difficult to trace the effects of such transmission to a specific population. Therefore, it cost more to the business venture to recover their image in a society when they collect their previous un-managed waste and managed it perfectly. It also cost more to collect such waste as they require more human resources and technologies. Thus a company can always prevent from such difficulties by implying timely decision to manage their waste in the beginning rather than regretting at the end. Similarly, they can also help their environment to be health and clean, as because of their unsettled waste might affect the local people living in a same society. Thus solid waste management is a huge challenge for the community as well as for the country in order to provide the better living space for the people, preserving the natural beauty of the country and controlling the earth's environment from degradation.

Managing solid waste is very important and challenging task but before jumping into the management part it is very important to understand the types and nature of waste that the community has to deal with. The process of identifying the nature of solid waste is equally important to understand like managing waste. Wastes have their own characteristics and their own nature. Some of them can be degradable to land and can be converted to fertilizer for plants, whereas some should be cared delicately so that it might not effect environment or human being or any living organism while destroying it.

3.4. 2 Classification of Solid waste

According to McDougall et al., (1995, p.2) "Waste can be classified by a multitude of schemes: by physical state (solid, liquid, gaseous) and then within solid waste by original use (packaging waste, food waste, etc.); by material (glass, paper, etc.); by origin (domestic, commercial, agricultural, industrial, etc.) or by safety level (hazardous, non-hazardous)". Similarly, "At a more fundamental level, how waste is best recovered, treated, or disposed of depends on the nature of materials in the waste, not on the original use of the discarded object." (McDougall et al., 1995). From the above description on types of waste, wastes are our daily unwanted substances which either could be very helpful to us if we have proper idea of use it again but it also has tremendous effect to the living beings if it was left to the environment to destroy. So according to its nature and materials which it used to be made, the wastes are classified into human friendly or risk possessive. The mainly classification of solid waste is categorized into two aspects of the nature of the waste. The human friendly are set to be known as non-hazardous waste whereas the negative and risk oriented wastes are known as hazardous waste which we define precisely in next paragraph with the help of tree diagram of classification of solid waste.

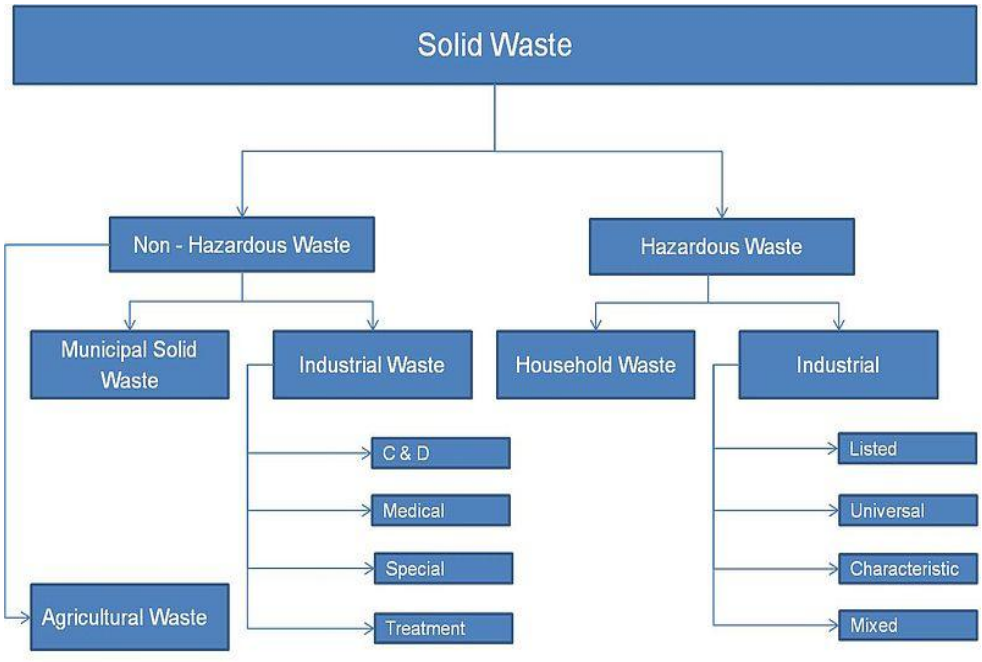

Figure 9: Tree diagram of classification of solid waste (Krishnan, 2011)

From the above figure of classification of solid waste we can see that the solid wastes are generally divided into Non-Hazardous waste and Hazardous waste. The non-hazardous wastes are those which can be easily disposed in a nature without having adverse effect to the human being and to the environment and whereas, Hazardous waste are those which can cause affect to the human being and to the environment if certain measures are not applied while conducting decomposition.

3.4. 3 Municipal Solid Waste

Municipal Solid Waste (MSW) can be defined using Chapter 21.3 of Agenda 21 (United Nations Conference on Environment and Development, Rio de Janeiro, June 14, 1992). Solid wastes "include all domestic refuse and non-hazardous wastes such as commercial and institutional wastes, street sweepings and construction debris". "MSW primarily comes from households, but also includes wastes from offices, hotels, shopping complexes/shops, schools, institutions, and from municipal services such as street cleaning and maintenance of recreational areas" (UNEP, 2004).

For Adedibu (1985), the residential and domestic solid waste is generated in residential environments, while Municipal Solid Waste (MSW) is generated in public areas, such as streets and parks. The MSW are the waste generated from the common area of the society where everybody almost everyday use that free space which belongs to the government. Thus the municipalities responsibility to manage the MSW. Similarly, from the report of UNEP (2013), argues that "Most waste management, and in particular the management of MSW, is local, rather than national" which means the local government agencies should control the solid waste generated in the community.

Similarly it also refers to those wastes which a residential people dump their house hold remaining near to their place in a dumping vessel or container which is kept by the government agencies so that these wastes are collected in a same place. "MSW includes kitchen garbage and unwanted household items of everyday use such as furniture, clothing, bottles, yard trimmings and newspapers" (Rhyner et al., 1976). Likewise **"**Municipal solid waste (MSW) is defined to include refuse from households, non-hazardous solid waste from industrial, commercial and

institutional establishments (including hospitals), market waste, yard waste and street sweepings"(Schübeler et al. 1996).

There are many different sources of solid waste in municipality area. Waste comes from the residential place, commercial establishments and public and private institutions. In some countries the Solid Waste Management (SWM) system also handles human wastes such as night soil, ashes from incinerators, septic tank sludge and sludge from sewage treatment plants.

Sources	Typical waste generators	Types of solid waste
Residential	Single and multifamily dwellings	Food wastes, paper, cardboard, plastics, textiles, glass, metals, ashes, special wastes (bulky items, consumer electronics, batteries, oil, tires) and household hazardous wastes
Commercial	Sores, hotels, restaurants, markets, office buildings	Paper, cardboard, plastics, wood, glass, metals, food wastes, special wastes, hazardous wastes
Institutional	Schools, government center, hospitals, prisons	Paper, cardboard, plastics, wood, glass, metals, food wastes, special wastes, hazardous wastes
Municipal services	Street cleaning, landscaping, parks, beaches, recreational areas	Street sweepings, landscape and tree trimmings, general wastes from parks, beaches and other recreational areas

Table 5: Types and source of Municipality Solid Waste (UNEP, 2004)

MSW are generally classified in terms of certain categories according to its nature. However, in a daily life scenario, the MSW are anything that is discarded by the people as a local waste in a society. These wastes are taken as a responsibility by municipalities for systematic incarnation in order to keep their society clean and healthy for living. Cailas et al. (1996) classify "MSW as the residues coming from households, commerce, institutions, and, in general, all those generated by

activities of the community". Bruner and Ernst (1986) define "MSW as the materials collected by the municipality or by authorized organizations".

The most commonly collected solid wastes are differentiated in 3 basic nature of waste. These three basic natures of MSW are first bio degradable, second non- bio degradable and finally the hazardous waste. The bio-degradable wastes are collected from house hold where people throw a lot of left foods, rotten vegetables and fruits, papers etc.

Figure 10: Classification of municipal solid waste

(Dgpspune, 2013)

These wastes are organic in nature which means it can be easily decomposed in our land field and can be transform into the fertilizer. These fertilizers are very good for vegetation which means the crops and vegetables grow better and healthy than those without any such organic fertilizers. Government should always try to focus on promoting such natural organic fertilizer as people consume very healthy and clean food in their daily life. The non-bio degradable wastes are those like plastic bags, plastic bottles, glasses, metal cans, rubbers etc, which cannot be easily decomposed in a nature. It means these wastes are either re-used, recycled or convert into some other form so that they can be usable again. If we try to decompose it by burning or burring it in a land field like bio-degradable waste, then it can creates a huge problem to the environment and pollute the environment.

Finally, the hazardous waste are those wastes which cannot be easily destroyed like non-bio degradable waste and considered as dangerous or potentially harmful to human health or the environment if proper care has not been taken place. These wastes are generally comes from both household and from industries. These wastes like computer products, light bulbs, chemical

bottles, batteries, hydro carbon products etc. these wastes are commonly produces harmful gas and radio-active particles when they are destroyed. Because of its harmfulness in nature, these wastes need special treatment before disposing it into the nature or recycling and converting it into other form of substances.

Thus, if a municipality can able to manage these free resources properly then it can not only help to reduce the environmental pollution in a society but also provide a source of income to the local people. "Many improvements in waste management deliver benefits simultaneously across a multitude of fronts: requiring less investment, delivering jobs and livelihoods, contributing to economic growth, protecting public health and improving the environment" (UNEP, 2013).

3.5 Major Strategies in Solid Waste Management process

"The primary purposes of SWM strategies are to address the health, environmental, aesthetic, land-use, resource, and economic concerns associated with the improper disposal of waste" (Henry et al., 2006). "Municipal solid waste managers are charged with an enormous task: get the waste out from underfoot and do so in the most economically, socially, and environmentally optimal manner possible" (Hoornweg & Tata, 2012).
Because of the time limitation and for the requirement of the thesis I have decided to select only two processes to manage and reduce waste.

3.2.2.1 3R Concept

"The reduction or minimization of municipal solid wastes (MSW) is defined as any technique, process or activity, which prevents, eliminates or reduces waste at the source" (Crittenden et-al, 1995). 3R is a very popular concept to the waste and waste related work as the 3R generally means reducing waste, reusing waste and recycling waste.

- ✓ Reducing which means minimizing the generation of waste, it can be done by selecting specific items carefully which last long to be used or optimizing product exactly to the requirement to produce the item, indeed leaving behind very minimal to dispose.

- ✓ Reusing refers to repeated use of items or parts of items which have the aspects of utilizable into the same product line or some innovative product.
- ✓ Recycling means exploitation of the waste itself as resources in order to create some meaningful value to the society or innovative product line which further can be a meaningful creation.

"The waste hierarchy has taken many forms over the past decade, but the basic concept has remained the cornerstone of most waste minimization strategies" (GoB, 2010). According to the figure 6 of hierarchy of solid waste management, most of the wastes are highly preferred to be reduced. Municipality always tries to reduce the generating rate of solid waste in their locality. As when the rate of production of these wastes are minimized then there will be lesser role for them to deal with the societal problems associated with waste.

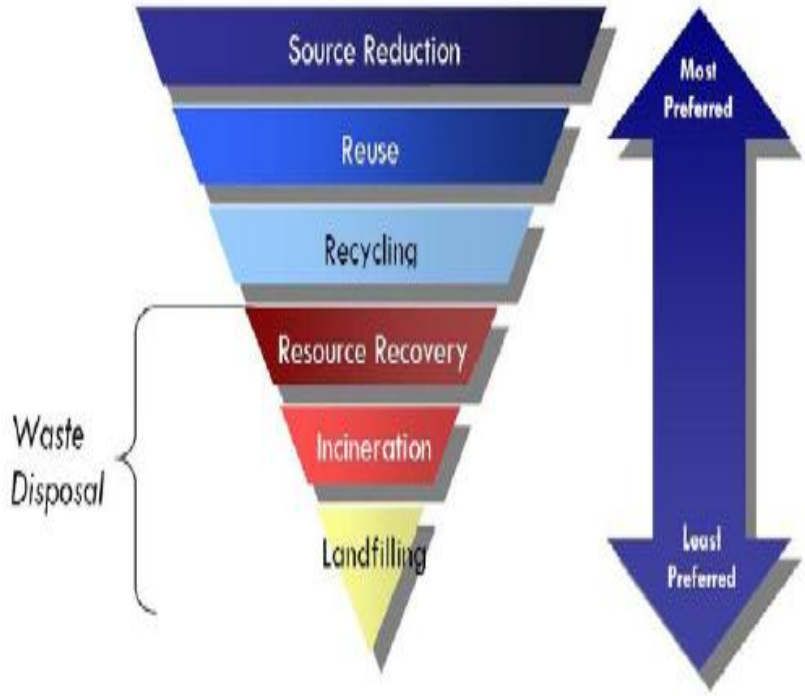

Figure 11: Solid waste management hierarchy
(UNEP, 2005 and EPA, 2006)

They can easily handle the small quantity of waste effectively and efficiently and finally there will be lesser environmental effect which not only they have to concern to improve for clean

environment but it is also for the local people who don't have to face different problem associate with the waste. So municipalities always try to focus on how they can reduce the increasing rate of waste in the society. The mere answers of how they can reduce such growing waste are through awareness program and waste management education. This learning platform helps local people to use their purchased product optimally and for the longer period of time.

In the second stage, those wastes which ultimately come out after finishing its primary object are set to be collected for reuse. Reuse mean re utilizing the same product to fulfill other necessary needs. For an example the plastic bottles which come as a municipal waste can be re used to make other innovative products like small cups, different attractive handicrafts. Other wastes like paper boxes can be again use to make new paper boxes also can be transformed and reprocessed to make the same paper boxes etc. Similarly, they can also produce fertilizer by decomposing house hold organic waste.

After separating waste into reuse products the remaining wastes are separated out for recycle. Recycling the product means converting the product into new form of product or re transforming into some usable product. For an example the can bottles are re molded and transformed it into some metal product or again use for producing can bottles. Similarly glass products has also the same nature like can bottles which can be transformed into other glass product etc. In the end the remaining waste which cannot be reused and recycled are in very less in volume and which a municipality can easily disposed with proper systematic order.

Thus reduce, reuse and recycle concepts helps municipality to lower their actual waste problem and by this concept they can easily helps to keep their society clean for living and also helps them to generate profit from such municipal waste. "The aim of the waste hierarchy is to extract the maximum practical benefits from products and to generate the minimum amount of waste" (GoB, 2010)

3.2.2.2 Anaerobic Digestion

Anaerobic digestion is another intelligent method of controlling the waste issues in a society. It is expensive perhaps one of the recommended process for converting un-used waste into reliable energy form thorough which a municipality can earn by selling such produced energy.

“Anaerobic Digestion (AD) is a natural process in which micro organism break down organic matter, in the absence of oxygen, into biogas (a mixture of carbon dioxide (CO2) and methane) and digestate (a nitrogen-rich fertiliser)” (DEFRA, 2013).

“In most cities of low- and middle-income countries municipal solid waste consists mainly of biodegradable matter” (Troschinetz and Mihelcic, 2008; Wilson et al., 2012). “This fraction, if not properly managed and treated, poses considerable health and environmental risks” (Scheinberg et al., 2010). The promising answer for increasing waste problem in urban area of developing countries could be “Anaerobic Digestion”. AD helps municipality not only decompose the generated waste in a proper way, but it also helps them to generate energy. The energy generate by burning these unwanted substances can be used for producing electricity or heating water or some other form which can help society to have better life. “Anaerobic digestion (AD) of organic waste is an effective treatment option that significantly reduces the amount of waste destined for disposal, and generates products of value, such as energy in the form of biogas and nutrient-rich digestate” (Hartmann and Ahring, 2006).

With the suitable climate and abundant of necessary raw materials, AD can be a promising solution for disposing growing waste and also a prominent business income for local people in developing countries like Nepal. Hence it has been recommended by most of the scholars for sustainable business source for poor nations. “Given the fairly simple process and its suitability for warm climates it is generally considered appropriate for developing country conditions” (ISAT/GTZ, 1999; Foresti, 2001).

Figure 12 describes the anaerobic digestion process. “AD converts organic matter into biogas (consisting primarily of methane and carbon dioxide), a renewable source of energy,and digestate, a potentially valuable fertiliser and soil conditioner, and has originally been used in the treatment of sewage sludge and agricultural manure and slurry” (Iacovidou et al., 2012). From the above description of anaerobic digestion the above figure explains how these organic wastes are collected and transformed into energy. At first all the organic waste from municipality and industries are collected into the same place to initiate the process, as it is obvious that the organic wastes can only be converted into fertilizers and other form of energy so there is a process of

separation of other non organic waste and organic waste is been done very carefully. After that the separated organic waste are then stored in a container with perfect heating and pressurizing condition. Due to the favorable temperature and pressure the organic waste starts to decompose and breaks down into methane gas and other carbon form, this gas is thus transformed into heat as it is highly flammable gas and while burning it a huge amount of heat is produced. The heat energy can be used for heating water; this heated water now can be sent back to the community to be use for the daily purpose or for industrial use.

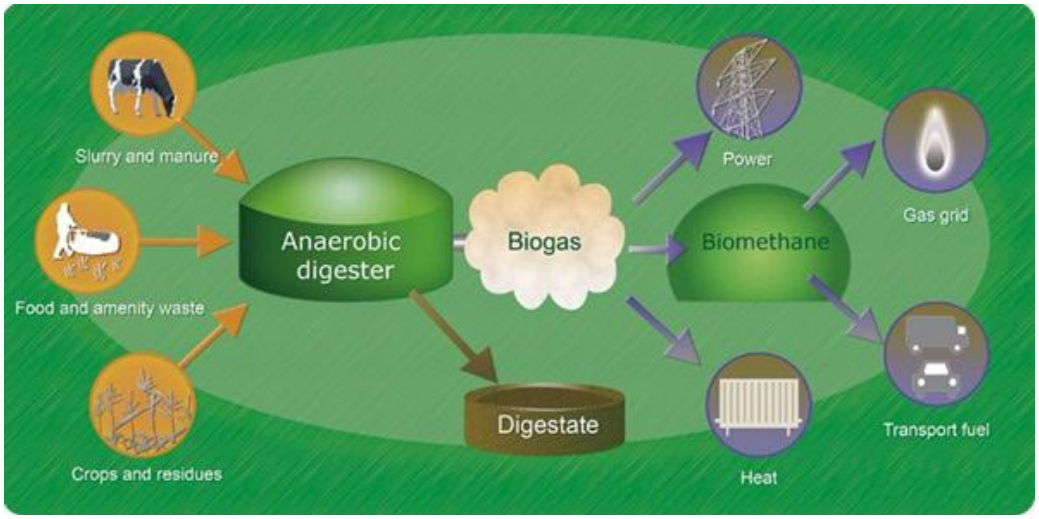

Figure 12: Anaerobic Digestion Process (Leogroupuk, 2013)

Besides that the steam which can be formed while transforming methane gas into heat energy can also be used to produce electrical energy as the nature of steam is lighter then the air, so it starts to move up. The steam rotates the fan and can rotate the turbine. With the sufficient rotation of turbine can now generates electricity and electrical energy can be extracted, these energy can be again sent back to the community to consume. The remaining leftover organic waste which are left after producing all the energy are taken out. These left out organic waste are thus transformed into fertilizer which can be formed after certain time of decomposition of organic materials. These organic fertilizers are used in agriculture which helps farmers to produce fresh and healthy vegetables and fruits.

Therefore the anaerobic digestion is very effective majors for community, through which a community can not only reduce their growing waste but they can also generate money by converting organic waste into energy and sell them to the local people. It also helps to produce organic fertilizers which help people to consume healthy food.

3. 6 Research Model and Summary

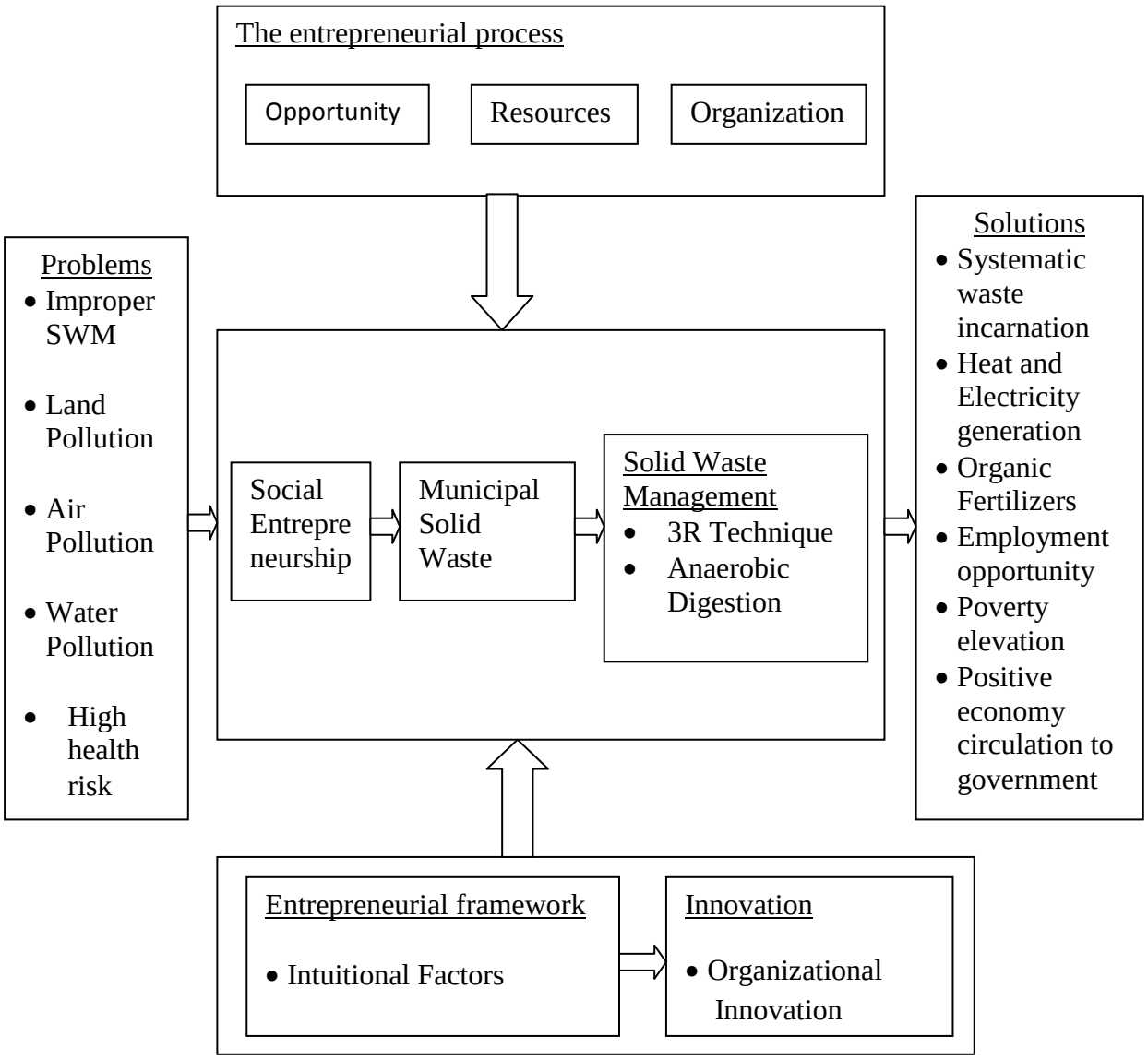

Figure 13: Framework for social entrepreneurship to address social waste problems

The solid waste has a huge impact on daily life of people. People have to deal with different risks which come from solid waste. The solid waste can contaminate land (soil), water, air etc. this contaminated elements are toxic to the living beings especially to human health. These contaminated elements have not only hampered our current environment but it can also last for generation after generation. Thus the study of solid waste management and its control mechanism is important and necessity for us to protect of our planet for further degradation and to save our planet for safe place to live. One of the approaches to solve this growing problem is to create a business environment and transform these wastes into something useful product or services. These businesses are commonly run by the government and also an attractive market for private firms. Although it consists of business value, but sometime government and private firms fail to utilize this free resources which means they fail to convert this easily available opportunity into profit. In such scenario where society has been suffering from this social problem can give birth to the social entrepreneurs, who come forward to solve the problem of solid waste.

This social entrepreneurship sees the social opportunity and follows the entrepreneurial process to identify the required resources and organize the team to exploit the opportunity. This chapter starts with describing the entrepreneurship and entrepreneurial process which helps to clarify the solid waste as an opportunity and its business values. The entrepreneurial process helps to identify the solid waste business and the requirement for exploiting solid waste opportunities which are resources and organization. After analyzing the social entrepreneurial process of solid waste management, the paper studies the necessary innovation requires to exploit this opportunity. As innovation is an important element without which opportunity cannot be utilized differently. The different and new idea makes the process separate from the available one.

The invention in new technology, process etc can help to shape the new product or services which can be more convenient way to solve the societal problem. There is various kind of innovation such as product, process, technology etc. Among them organizational innovation could be one of the innovation by the help of which social entrepreneurs can solve the social waste problem. The requirement of innovation in the social entrepreneurship is necessary, as social entrepreneurs need the best process to solve the social problem effectively. The

organizational innovation can help social entrepreneurship to shape their decision selection to choose the best process. It will also help society to acquire the required technological innovation. Similarly, it can also help social entrepreneurs to reshape their administrative organizational structure and recruit the best people in the organization. Organizational innovation is also necessary to make a strategic plan to exploit the available opportunity and also to decide for future projects. However, identifying the social entrepreneurial process and having organizational innovation cannot solve the social problem of solid waste or any social problem. Overall all the entrepreneurs must carefully study the environment where they intending to initiate their business. To understand the factors that can hinder or facilitate the organization must be carefully watched. These factors can be explained as entrepreneurial framework. The entrepreneurial framework shapes the organization and their decision to exploit the market opportunity. The entrepreneurial framework consists of two factors, formal institutional factors and informal institutional factors. The study of formal institutional factor provides the information regarding the external environment like political, legal, economic, technological and socio-cultural environment. The importance of formal institutional factor is necessary before initiating solid waste business which can provide helps entrepreneurs to select the decision of choosing the appropriate innovation and process of exploiting the solid waste opportunity.

After all these factors analysis and innovation selected the social entrepreneurship can select the best process which can be 3R and Anaerobic Digestion methods and provide the solution of solid waste problem. These processes can help to reduce the growing waste problem and also develop the society by providing employment opportunities and different facilities like community heating, electricity, bio-gas energy, organic fertilizers and others related implications. Thus, the social entrepreneurial process in the solid waste management can not only decrease the growing solid waste problems but its implication can be a remedy for the society to live in a better life.

The chapter had studied the origin of solid waste management process in the world. Similarly, it has also studied the current performance in different stages in solid waste management by different economic group. Similarly, the paper had studied the solid waste and how it has affected the society. Likewise, the paper also studied different kind of solid waste and further studied the municipal solid waste and how and why it has caused problem to the society. The

disposing process has also been studied so that to provide the knowledge about how solid waste management process ends. The characteristics and nature of solid waste was studied in order to understand the risk associated with it. In the final part of this chapter, the explanation of entire framework of literature was studied which helps us to understand the relationship between research question and theory.

Chapter 4
Research Methodology

5.1 Chapter Introduction

This chapter will explain about the importance of research methodology for the thesis study. There are different types of research methodology available to tackle the problem and relate the literature to find the solution. In this chapter the selected research process which is qualitative method was explained with the reason why it is appropriate. Similarly, the chapter also explains the benefit of qualitative research methodology. Further, the chapter explains the importance and causes for selecting case study method. The study will also compare what is in the theory and what actually we find in the reality which means comparing theory and reality. In the final part it summarizes the methods of data collection and how these data were analyzed.

5.2 Introduction Research Methodology

Research methodology is one of the important tasks while writing master thesis. It tries to explain the scientific and systematic search for information. According to the Concise Oxford definition of research as "the systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions." Similarly Redman and Mory (1923) defined research as a "systematized effort to gain new knowledge." In conclusion research methodology refers to the process of obtaining logical and systematic information of any studies.

According to (Kothari, 2006), there are various methods to cumulate the specific logical information such as descriptive and analytical, applied vs. fundamental, qualitative vs. quantitative, conceptual vs. empirical and some other research method. According to the nature of my thesis studies and aim of my results, qualitative research methodology will be suitable method for me to undertake. As the result, my thesis aims to discover the underline motives of social entrepreneurs to start a social venture in waste management. The collected information's are in inductive in nature. Similarly, these data's cannot be easily measurable and hence need

rigorous method to analyze and also to understand. Because of such reason I have selected qualitative research as my methodology to unfold the truth and present the critical outcomes.

5.3 Qualitative Research Methodology

"Qualitative research is conducted through an intense and/ or prolonged contact with a 'field' or life situation" (Miles & Huberman, 1994, p. 6). Qualitative methods are useful to describe, search or find out any phenomenon which does not explain or understand well so far (Strauss and Corbin, 1990, p.17). Similarly (Denzin and Lincoln, 2005) explains that "Qualitative researchers aim to gather an in-depth understanding of human behavior and the reasons that govern such behavior". It also "understand, account for, take action, and otherwise manage their day-to-day situation" as explained by Miles and Huberman (1994, p. 7).

Furthermore qualitative data can give much more information which cannot get from statistical sampling techniques. Hoepfl (1997) states that "qualitative researchers seek illumination, understanding, and extrapolation to similar situations". Furthermore, Endacott (2005) explains that "qualitative research is known as 'real world' research". Thus the "qualitative research uses a naturalistic approach to understand the phenomena and it try to reveal the truth" (Golafashani, 2003).

5.4 Case Study

Before selecting the case study we need to understand what Case means and how it affects the entire research study. Gomm et al. (2000) revealed that, case study research has become extremely popular not only in sociology but also in other branches of science, such as policy and public administration research, business sciences, community sociology, management studies, branches of psychology and medicine (particularly neuropsychology), educational sciences, planning sciences, etc. "Case are empirical units, theoretical constructs, and subject to evaluation, because scientific and practical interests are tied to them" (Ragin, 1992). Similarly, (Stake, 1995, p.2) defines case is a unique, one among others, and always related to something general. Likewise, "the case study approach is mostly chosen in research fields where the historic

and authentic dynamics and perspectives of real social or natural systems are considered" (Scholz and Tietje, 2002).

"On the one hand, case studies are widely used by many communities in business research; for example case study research has consistently been one of the most powerful methods in operations management, particularly in the building of new theory"(Dul & Hak, 2008). However, Dul & Hak (2008) also explains that it is one of the best techniques to understand the exploratory research. "On the other hand there is strong resistance to case study research in some communities and its use has been rather narrow, often restricted just to exploratory research" (Dul & Hak, 2008). Yin (1989, p. 23) defined case study research as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used". In order to explain a new theory where most of the research has not yet been focused, the case study research provides a possible outcome for explaining and describing research model. "Case study research is known to be very suitable for explanatory, descriptive and exploratory research" (Blumberg, Cooper & Schindler, 2008).

As the case studies consist of real life context data and try to find out the reason for such incident by checking with theory for its validation and proposition. The case study can be done in a single unit which explains the study of single event with its past references and also could be multiple where, a single unit is compared with another similar unit in order to gather comparative data.

As my research studies on Social Entrepreneurship in Waste Management, it does not consist of large number of data but the information are generated through interview method. These data are explanatory, which cannot be measured precisely and it varies from person to person. Because of such nature of my acquired data qualitative research methodology is perfect for my studies. To provide a meaningful and credible research, I have selected two cases for my methodology, so that I can explain the differences, cause of differences and probability for correction and improvement.

5.5 Data Collection

Data are very important evidential proof. “Formal data collection is necessary to ensure that data gathered is both defined and accurate and that subsequent decisions based on arguments embodied in the findings are valid” (Sapsford, 2006). Data collection included both primary and secondary data sources. In my research studies I have collected data from both primary as well as secondary data. Both sources of collection are essential in my case in order to understand the related theories and observe the practical implication in realities.

5.5.1 Primary Data Collection

Primary data was collected through semi-structured interviews. The semi-structured interviews consist of some specific questionnaire and some customized questionnaire depending upon the situation. As my thesis is based on multiple case studies, so I have selected few common question and some customize question in both case. The reason for selecting semi-structured interview is to ensure that participants answers my predetermined customized questions and also helps them to open for more feedback and more information.

a. Interview

The interviewees for my thesis are selected according to the performance in their work regarding waste. The selected people have prior knowledge on waste and its consequence. Some of the interviewee’s are involved in waste related business and some are responsible governmental agencies. The interview was taken by requesting several emails for meeting and also the questionnaire was send through email when there was no possible circumstance to meet the person directly. The interview was taken in their office room and with their approval the entire interview was recorded in an audio file.

To gather the information regarding social solid waste problem and social entrepreneurial activity in Kathmandu I have asked questions regarding the topic with Informant A. Informant A was a social entrepreneurial worker in a NGO named Pragya Seeds Nepal and their main

objective was to implement Zero waste strategy in Nepal. The informant A has prior knowledge and experience of social entrepreneurship activities in Kathmandu, so the information could be more reliable and trustworthiness. Similarly, to understand the current waste management situation and future projects in Nepal, I made an interview with Informant B. Informant B is a chief of the Environment Management Division, Kathmandu Metropolitan City (KMC). The reason to select the informant B was to know the government approach towards solid waste management in Kathmandu city. Similarly, to gather other information like the government policies, current available technologies, future approaches was also reason to select informant B. The interview was lasted for 1 hour and has been taken in the office room of Environment Management Division. As the interview was in the office hour, so the interviewee was frequently disturbed by different people while conducting the interview.

Similarly, I had also made an interview with Informant C. Informant C president of private non government organization (NGO) participating voluntarily in waste sector in Kathmandu. Jagaruk Mahila Bikash Samuha (JMBS) was founded by group of women social entrepreneur in 2003 for the sole purpose is to dispose the communal solid waste with proper procedure and generate profit by selling organic fertilizers which comes from the collected waste. The interview was taken in informant's office premises for 1.5 hour. The purpose of selecting informant C was to understand how private NGO's are undertaking solid waste management process. Similarly, in order to carry out the solid waste problem, the understanding of challenges and threat that they have been facing in solid waste sector is also necessary and also another purpose of selecting informant c. The interview was also conducted to understand their motives of entering in such market, the scope of such business in long run and possible earnings from solid waste management.

Besides that, I also made an interview with the Informant D to understand the current solid waste management process in Oslo community. Informant D is the Communications Adviser in Waste-to- Energy Agency of Municipality of Oslo. Because of the work load of the interviewee, the interview was only for 1 hour. The purpose of interviewing was to understand the process of entire waste management cycle which starts from household to the energy recovery and finally disposing in a land field. Similarly, as Oslo community was earning from solid waste and also

transforming the available waste into reliable sustainable source of energy. The purpose was to understand the various latest technologies used in the process, and also gather some information how the community is earning from solid waste. Accordingly, other purposes are to understand what kind of energies can be made from available solid waste, how it can be made, how it is helping to maintain the cleanliness in the city, what are other facilities that the society are getting from such business.

All topics are placed under Appendix which is at the end of the reports with organized form.

5.5.2 Secondary Data Collection

Secondary data included a wide variety of academic sources, and included both qualitative and quantitative data. In order to collect the secondary data for my topic, I have also searched research materials such as published Journal articles, books, internet websites and material received from the participants (product brochures) as they are the reliable source of understanding the concept and gathering require information about the topic.

5.5.3 Data Analysis

The accumulated data from various sources are collected and transcribed. These data's are then classified according to the contents. The organized data are overviewed with each of the cases to get a general sense of emerging trends, patterns and concepts. It also provides the better framework to understand the similarities and differences of strategies in both cases.

4.6 Testing Validity and Reliability

At first the validity and reliability provides the evidence that the information which are gathered for the research are true and reliable. It is an important part in qualitative research. Similarly, Patton (2001) studied by Golafshani (2003), states that validity and reliability are two factors which any qualitative researcher should be concerned about while designing a study, analyzing results and judging the quality of the study. But to test the reliability and validity in the

qualitative research methodology is a complicated process. In the qualitative research, the research can be tested by different method. Generalization is one of the methods which can maximize or test the validity and reliability of a research. According to Golafshani (2003), he observed that to generalize findings is the most common method to test validity in the research. Similarly, he also argues that research quality depends on the generalisability of the result. Likewise, another approach to test the validity and reliability could be triangulation approach. The triangulation approach can help to improve validity and reliability of the research. It is a combining strategy in which multiple kinds of methods or data are compared in order to understand how true the data or information is. According to Bashir et al. (2008), he explains that the use of several methods to collect data for example, observation, interviews and recordings helps to make the research more valid, trustworthy and reliable. Likewise, Patton, (2001) in the Golafshani (2003) in the article "Understanding Reliability and Validity in Qualitative Research" noted that this triangulation method strengthens the research or findings. Similarly, Mathison, (1988, p.13) stated explained that triangulation strategy is useful to control bias and establish valid propositions in qualitative research. Furthermore, Endacott (2005) also explains that using believable informants, continuous observation and data analysis, looking for negative cases and observe the situation several time at different period following strategies can enhance the trustworthiness or reliability and validity of the research.

In case of my research I have read several articles to write my report. The information from these related articles enhances my knowledge regarding my topic and also ensures that my results were valid and reliable enough to proceed for the next chapters. In order to compare my results I have always crosschecked the gathered data. The understanding of information was necessary in order for me to put in my research for that I have tried to read as much article as I have found until I find myself clear with the information. I also tried to compare the information with other articles to check the trustworthiness of the information. For the government or official data I tried to gather from the official website and also compared with other private informants to ensure that the data are reliable enough. Similarly, I used credible sources which were given in the articles by the author and also double check with other related authors. Likewise, to use the important facts provided by author, I had tried to find the original article to understand the real meaning and purpose of such fact and also to ensure validity and reliability in my findings.

4.7 Summary

The chapter provides the brief explanation of the require methodology for the research question. This chapter has proposed that the qualitative research methodology is the appropriate analytical tool for this research. The selection of qualitative methods in research methodology helps to identify the real world scenario and describes the reality of the market, the selection of this methodology helps to identify the current phenomena of the solid waste market in Kathmandu city. The case studies will help to understand the strength and weakness between in cases. The secondary data's were cumulated by the help of journals, articles, books, newspapers etc. similarly, the primary data's were gathered by interview based data collection. The purpose of selecting interview based data collection method was to understand the reality by direct participation. Furthermore, the obtain data's were analyzed according to the best format available.

Chapter 5

Case Study

6.1 Chapter Introduction

The chapter analyzes the cases of two different cities. In this chapter both Nepal and Norway's capital cities were compared in their geography, demography, population and solid waste generation and decompositions. As my research objective is to understand the possibility of social entrepreneurial venture in solid waste management in Nepal, most of the case studies will be focusing on the information of Nepal and its capital city Kathmandu. Similarly, there will be detail studies of solid waste management in Nepal and its problems and consequences. The selection of another small case which is Oslo city is to understand how a developed city is using solid waste as resources for earnings and delivering different facilities to the local people. similarly, another interesting and important reason for selecting Oslo community is that it has sophisticated and latest technologies as from the report of EGE (2012), the community has invested 550 million NOK (local currency) in the advanced technologies for environment health and sustainable development. Furthermore the government policies in solid waste management are also studied in both countries.

6.2 Case study I

6.2.1 Introduction to Nepal

Nepal is one of the least developing countries in the South East region of Asia. Nepal as being a small country in Asia, "it has total land of 147,181 sq km^2" (CBS, 2003), which is 95^{th} position in the list of sovereign countries in the world. "Population of Nepal as of the census day (June 22, 2011) stands at 26,494,504 showing population growth rate of 1.35 per annum" (CBS, 2011). It has the population of above 26 million people mostly living in central cities and very few, living other part of the country which is almost 5times populous than Norway. "The increment of population during the last decade is recorded as 3,343,081 with an annual average growth rate of 1.35 percent" (CBS, 2011).

Figure 14: Map of Asia and Nepal (World atlas, 2013)

It is one of the countries consisting higher population density in such a small area. Similarly, CBS (2011) reports study that the total population density of capital city Kathmandu valley recorded in 2011 was 19.250 per km^2, which means almost 2.5 million of people living in a small area of 50.67 sq km^2.

Figure 14: Map of Asia and Nepal

"Nepal is divided into three major geographic regions: mountain (35.2%), hill (41.7%) and terai (flat land:23.1%)" (Pokhrel & Viraraghavan, 2005). Nepal has divided into geographically in 3 distinct landscapes. It consists of mountains, hills and flat land called terai. "The elevation of the country varies from 60 m in Terai (in Jhapa) to 8848 m (at Mount Everest) in the Himalayas within a short distance of 90–120 km" (HMGN, MoWR, 2002, cited by Pokhrel & Viraraghavan, 2005).

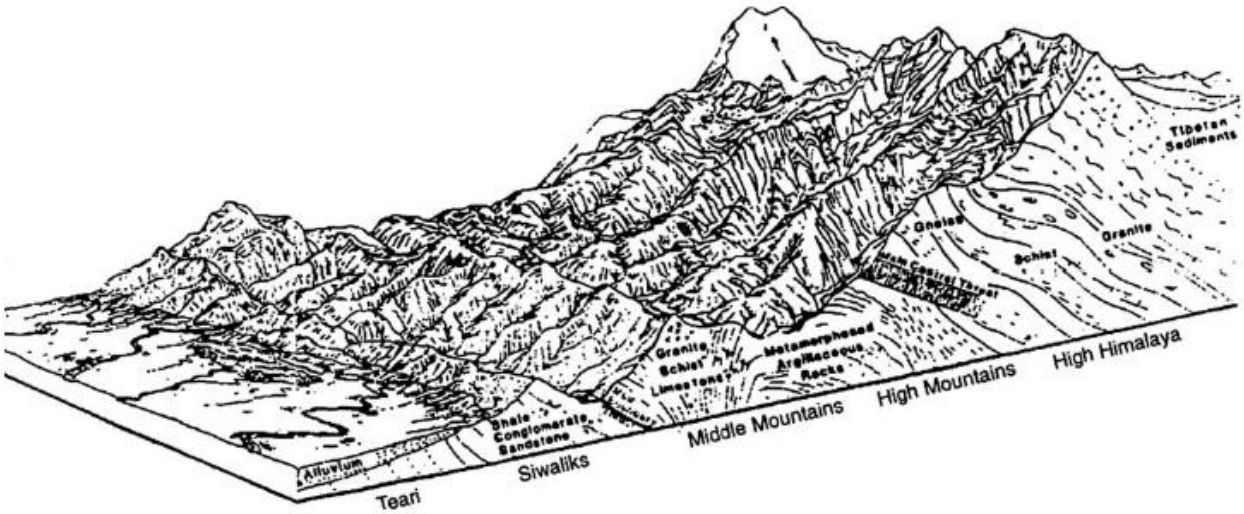

Figure 15: Physiographic region of Nepal (HMGN, MoWR, 2002, cited by Pokhrel & Viraraghavan, 2005)

"The topographic diversity is reflected in the variation in the climate. The mountainous region has a very harsh climate, making life inhospitable" (APO, 2007). Thus only 60% of total land of Nepal is covered by flat lands and some less inclined hills where development and industrialization can be easily possible, besides of those land the development process are very slow and infrastructural building has been one of the prime challenges.

The major concern of Nepal in the current situation is to establish a political stable government. Apart from the political instability country is still suffering from corruption, illiteracy, cast differences, poor infrastructure, insufficient power supplies and slow implementation of economic reforms, etc. Along with the other major issues, solid waste management has always been a concern agenda for all the political parties. Ironically, these issues of waste have not yet been prioritized by any political parties once when they reach to the governing position.

6.2.2 Introduction to Kathmandu Metropolitan City (KMC)

Kathmandu is the capital city of Nepal. "Kathmandu, the capital and main political centre of Nepal, lies in the bowl-shaped Kathmandu valley, a natural region which contains some of the

oldest human settlements in the central Himalayas" (Thapa et al., 2008). "Kathmandu, together with three nearby municipalities within the valley, Kirtipur, Madhyapur Thimi and Bhaktapur, form the Kathmandu Metropolitan region" (Thapa et al., 2008). "Kathmandu city (along with other urban centres inside the valley) and its culture date back at least 2000 years to the pre-historic Kirat period" (Shrestha et al., 1986).

"The city, so defined, extends over 65 square kilometres of area and had a total population of 834,837 in 2001" (Thapa et al., 2008). "From 1991 to 2001, Nepal's population increased by 2.2% per annum, while KMC's urban population grew by 7.9%" (Pradhan, 2004). "It has an estimated population of 2.18 million with an annual growth rate of 5.2%" (Thapa & Murayama, 2010). Recent studies of CBS (2011) shows that it has the population of 435, 544 people and consist highest population density 4.416 person per square km. As being a centrally focus modernize area and availability of basic to luxurious commodities inside the valley, this place has attracted almost all the people living around the entire country. It is also the political focal point and centre for all the governmental works. "It is the main political and administrative center, a major tourist gateway, and an economically strategic location in the country" (Thapa et al., 2008).

Besides, these factors it also consists of highly reputed and modern health research facilities. Similarly, the city is also a main attraction for students who want to obtain higher education. It consists of two renowned universities and many colleges providing qualitative education like engineering, medicine, management, etc. The CBS (2003) study report shows that, among internal (Nepalese) migrants to the city, basically the decision to migrate in Kathmandu valley were stated due to factors such as family reasons (50%), job searching (18%), easier life style (14.2%), education/training (9.1%), natural disaster in source area (0.6%), political reasons (0.3%) and other purposes (3.8%). "External migrants are much fewer in number than the internal migrants but their proportion has increased in the past decade because of the conflict in the country" (Thapa et al., 2008).

"Kathmandu is situated within the geographic coordinates 27°38′32″ to 27°45′7″ North latitudes and 85°16′5″ to 85°22′32″ East longitudes" (Thapa et al., 2008). "The city is lied at an average altitude of 1350 m above sea level" (Thapa et al., 2008). The city is perfect place for living as it has average temperature throughout the year. "The climate of the valley is subtropical cool-temperature" (Thapa et al., 2008).

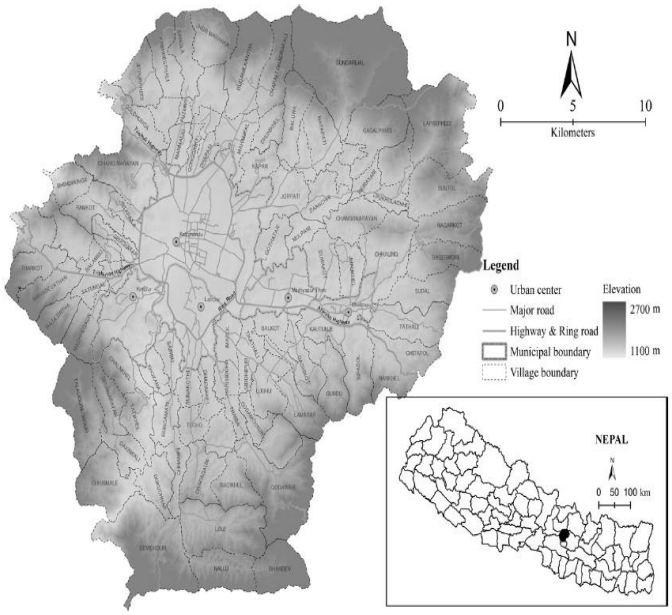

Figure 16: Study area – Kathmandu valley, Nepal. (ICIMOD/UNEP, 2001)

"Kathmandu Valley consists of Kathmandu (Capital of Nepal),Lalitpur and Bhaktapur districts with five municipalities and 99 Village Development Committees (VDCs)" (CBS, 2001). "This tectonic valley is a tertiary structural basin that is covered by fluvial and lacustrine sediments and encircled by mountains on all sides" (Pradhan, 2004) "The annual maximum and minimum temperature were between 29.7° C in May and 2° C in January, respectively" (Thapa et al., 2008). "Annual rainfall was 1740 mm in 2003, the extreme year of the decade for both temperature and rainfall" (CBS, 2005). The average humidity in the city is around 75%. Similarly, (HMGN, 1969 cited in Thapa et al., 2008) urge that the climate becomes harsh because of the monsoon winds in between June and August. "The Kathmandu valley is drained by the Bagmati river system" and it is the prime source for drinking water and irrigation" (Thapa and Murayama, 2010). "The river system is the main source of water for drinking and irrigation in the valley" (Thapa et al., 2008). "The city area is generally flat, with sloe less than 1 degree, and soils have predominantly loamy and boulder texture (Haac and Khatiwada, 2007).

As being a poor nation and highly populated city area, government could not able to fulfill the basic requirements of education, electricity, water supply etc. Besides these problems, waste

sector has also been frequently neglected. The rise in population in Kathmandu because of being a centrally located for political and administrative powers, has not been suffering from equally distributed electricity, water supply but there has been also problem of proper waste management and waste treatment.

6.2.3 Solid waste management in Kathmandu

Solid waste management is a huge problem in Kathmandu municipality. " Kathmandu has faced great challenges in solid waste management including not only the collection, transfer, and final disposal of waste, but also a lack of public awareness of the solid waste system, haphazard urbanization, the introduction of environmentally unfriendly materials, and changing consumer consumption patterns" (Alam et al., 2008).

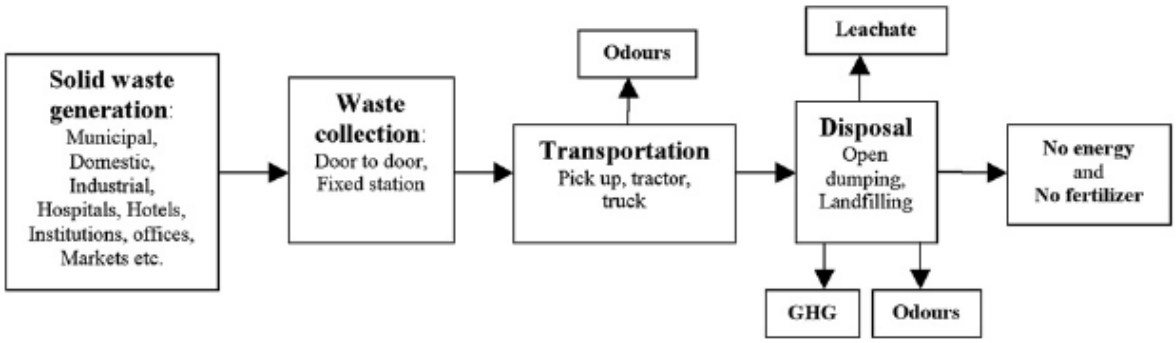

Figure 17: Typical waste management practices in Kathmandu Valley. (Axiotis, 2011)

The traditional practice of managing solid waste in most of the municipalities includes open dumps in abandoned fields or on the bank of the rivers or streams (65–100% of the MSW depending on the municipalities) (Pokhrel & Viraraghavan, 2005). As like in other city KMC also collect municipal solid waste, transfer it to the final disposal ends. In general, Kathmandu City generates wastes from municipality, industries, hospitals, hotels, etc. they collect these waste by door to door method through waste carriers. These carriers collect the generated waste and transfer them to final disposal or dumping sites. The detail studies are given below as sub headings of Solid waste management in Kathmandu.

7.1.1.1 Waste generation in KMC

According to Pokhrel & Viraraghavan (2005) "The total amount of solid waste generated in the Kathmandu valley is estimated to be about 291 tons/day (Joshi, 2003)". "The total MSW generation in KMC was determined by combining household solid waste with waste from hotels, restaurants, institutions and streets" (Dangi et al., 2011). "The estimated waste generation rates for 2001, 2011, 2021 and 2031 are 0.39, 0.52, 0.70 and 0.95 kg waste/capita/day, respectively, calculated on the basis of 0.48 kg/capita/day waste anticipated in 2008 with an annual rise of 3% per capita per day" (Shekdar, 2009). The solid waste generated between 1986 and 2003 are given below in a table, which shows the increasing order of solid waste with increase in population in Kathmandu Municipality.

Year	1986	1989	1990	1991	1999	2000	2001	2002	2003
Population ($x10^3$)	280.7	338.331	322.9	427.045	594.07	629.714	671.846	707.547	738.173
Waste generated (ton/year) ($x10^2$)	300.58		346.57		748.16	775.26	779.37	800.72	827.82

Table 6: Population and waste generated for different years Source: (KMC, 2004)

The figure 18 and 19 shows the increase in population and waste generation with increase in year between 1986 and 2003.

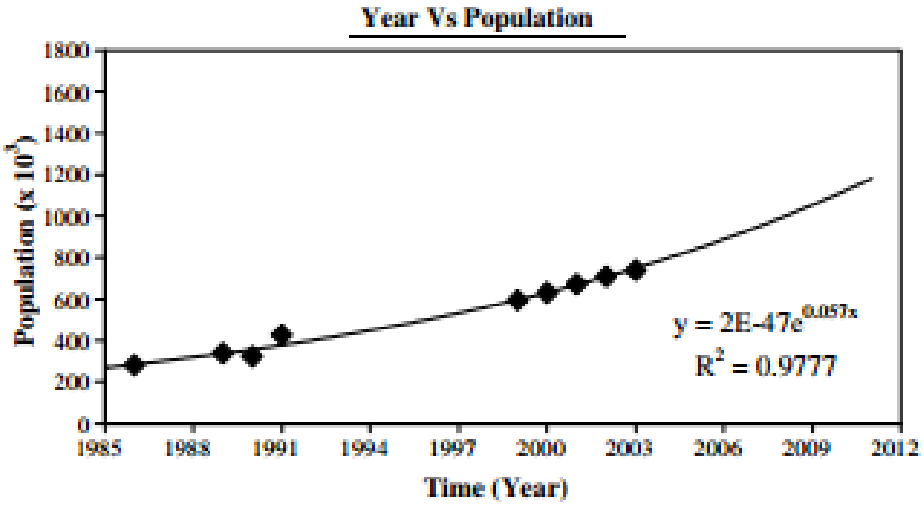

Figure 18: Population growth of Kathmandu city (Karanjit and Shrestha, 2005)

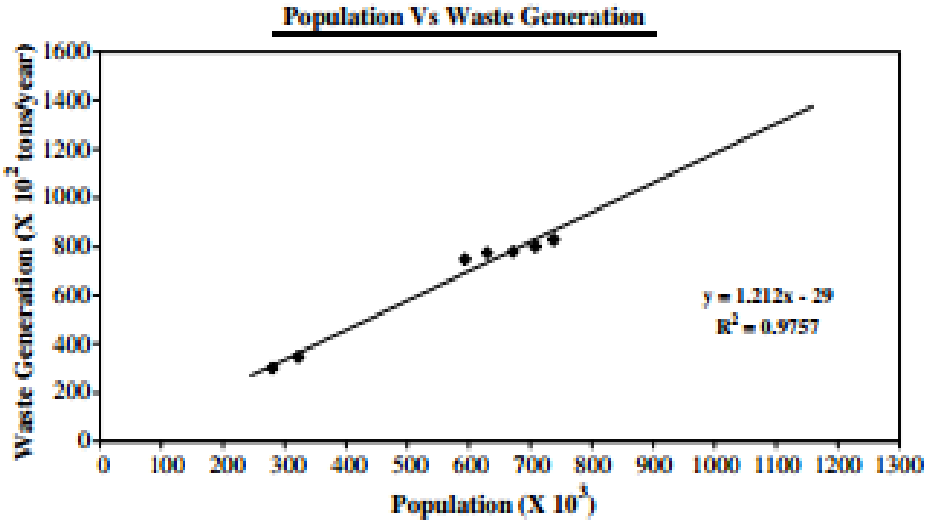

Figure 19: Waste generations with respect to population (Karanjit and Shrestha, 2005)

The figure explains that in Kathmandu city, the total population increases with the increase in year. As the number of population increases it has also affect the waste generation. The generation of waste in 1986 was 30058 ton and when it has reached to 2003, waste has increased to 82782 ton. This is more than 2 times the data of 1986 and proved that increase in population has positive effect of waste generation in Kathmandu City.

7.1.1.2 Waste Composition in KMC

"Wastes in Kathmandu Valley, similar to other low income cities in developing countries, contain a large percentage of highly biodegradable components" (Axiotis, 2011). In Nepal, "the wastes consist of 80% biodegradable substances, 7% paper, 2.5% plastic, 3% glass, 0.5% metal, and 7% other materials" (Shekdar, 2009). Likewise, Dangi et al., (2011) explains that in Kathamndu City the house hold waste composite of largest proportion of organic wastes (71%) and rubber and leather was the smallest (0.3%). Plastics (12%), paper and paper products (7.5%) and dirt and construction debris (5%) followed the organic wastes. Alam et al., (2008) explains in their study that in the year between 1988 and 2003, the generation of solid waste increases with increase in organic waste and other wastes which is explain in below table.

Year	Waste composition ($\times 10^2$ tons/y)									
	Waste generated	Organic	Paper	Glass	Rubber/leather	Metal	Wood	Plastic	Cloths	Others
1988	259.8	150.2	16.1	4.2	1.0	1.0	1.3	5.2	5.2	76.2
1991	317.0	189.9	21.6	10.1	2.5	1.6	–	8.2	12.0	71
1995	413.8	216.0	24.8	14.9	9.5	19.9	18.2	22.3	33.5	54.6
2000	775.3	523.3	64.3	12.4	1.9	6.6	4.7	88.4	27.9	45.7
2001	779.4	544.3	66.2	19.5	5.1	7.2	5.7	71.5	23.5	36.3
2003	827.8	562.9	66.2	16.6	–	–	–	91.1	–	91.1

Table 7: Waste composition quantity for different year. (KMC, 2004)

The figure explains that between 1988 till 2003, there has been huge increment in organic waste. Similarly, plastic waste were somewhat similar between 1988 till 1995, but after that, there has been dramatic change in plastic product as the figure explains that it was a record 9110 tons /year in 2003 in KMC. The figure also explains that there will be continuous increase in use in plastic product hence result to increase in plastic waste in KMC. "There will be a dramatic change in plastic waste production from 9110 tons/year in 2003 to 21 400 tons/year in 2006 due to the increased use of plastic products" (Alam et al., 2008)

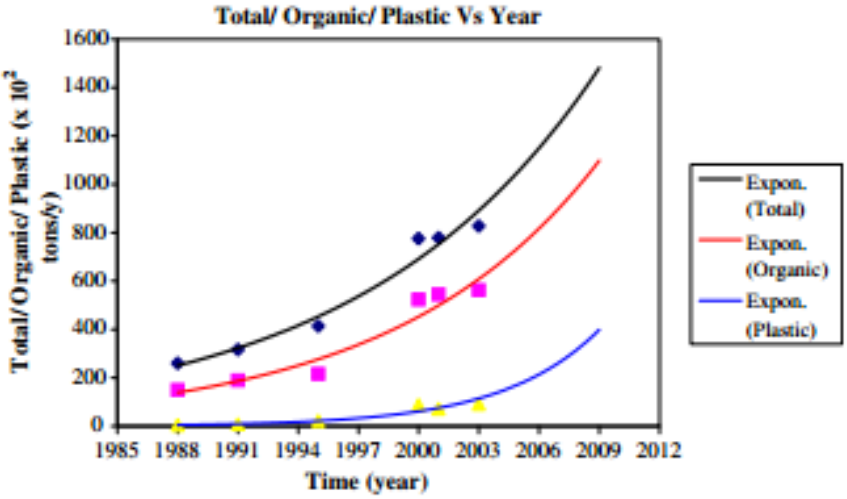

Figure 20: Trends of total, organic and plastic waste. (Karanjit and Shrestha, 2005).

Similarly, Dangi et al., (2011) further studies and found "that amounts of glass, hazardous wastes, textiles, other wastes and metals were greater than rubber and leather. The hazardous wastes stream measured significantly more at 1% than the 0.4% obtained in the pilot study." (Dangi et al., 2011)

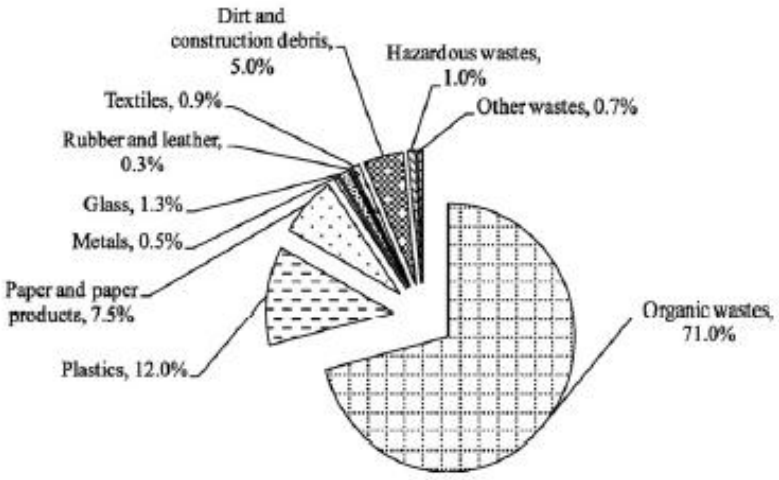

Figure 21: Composition of household waste in KMC. (Dangi et al., 2011)

Dangi et al. (2009) obtained a lower number, 62.9%, because the pilot study was conducted for two weeks at the participating households, thus leading to more accurate measurements of waste

characteristics. The report of Dangi et al., (2011) studies 5 sources of waste generation which includes household, restaurants, hotels, school and streets. The study found that "Organic wastes was the largest waste stream in all five sources of waste investigated, varying from a high of 71% in household waste to a low of 38.6% in school waste" (Dangi et al., 2011). Similarly, because of the increase in urbanization the result of increase in buildings has gone up in Kathmandu city. "The firm increase of dirt and construction debris gathered in the data for the strata (3.3% - 7.7%) in the field study support a gradual increase of construction activities as the strata extended out from the core of KMC where there are open spaces" (Dangi et al., 2011). Similarly the study by Dangi et al., (2011) also found that there has been increase in hazardous waste in household waste and street waste. Dangi et al., (2011) also urge that there is 523.8 metric tons of total waste generated in a day in Kathmandu City.

7.1.1.3 Waste Collection in KMC

Waste collection in Kathmandu city is basically done by Kathmandu Municipal Corporation but "there has been substantial increase in the number of solid waste management organizations in addition to the dominant KMC" (Alam et al., 2008). The private organizations participation has foster the waste collection environment in KMC. "These organizations primarily include private limited companies and Non Government Organization (NGO's). On a smaller scale, community based organization (CBOs) and youth clubs are also involved in the collection of waste" (Alam et al., 2008). "There are basically three ways of collective systems available in the valley. Primary, secondary and direct collection systems are available for collecting waste from households in Kathmandu Metropolitan City" (Alam et al., 2008). Alam et al., (2008) further explains that the primary collection of solid waste starts from the house itself. The household waste is collected from house are placed at their personal refuse bins or to the public containers. Secondary collection means, collecting those household wastes from personal bin or from public container by the collecting vehicles and finally the direct collection is transporting the collected solid waste to the final disposal site for systematic dumping.

In KMC, the solid waste is mainly collected by wards of KMC and private organizations. "Kathmandu Municipal Corporation collects the majority of the waste of Kathmandu City.

Wards of Kathmandu Metropolitan City are responsible for waste collection within their own jurisdiction" (Alam, et al., 2008). Similarly, Alam et al., (2008) further explains that "there are three modes of waste collection exist in Kathmandu Metropolitan City: roadside collection, door to door collection, and communal container collection." KMC has been using tricycle, tractor, open truck, container carrier as the main vehicles for collecting these generated solid wastes in the city. The equipments for collecting solid waste and household waste in KMC are given below.

Activity	Equipment in use	Implementation body		
		Generator	Municipality	Private sector
Primary collection	By Hand	√		
	Handcart		√	√
	Tricycle			√
Direct collection	Tricycle			√
	Tractor			√
	Open truck		√	
Secondary collection	Tractor		√	
	Open truck		√	√
	Container carrier		√	

Table 8: Organizations involved in the waste collection process (KMC, 2004)

According to Alam et al., (2008), KMC has more collection of solid waste than Non Government Solid Waste Management Organization's (NGSWMO) in 2003. "According to the latest figure of KMC for the year 2003, the NGSWOMO collect 25% of the total waste generate while KMC collects 69%, bringing overall efficiency to 64% (i.e. 6% or around 13.5 tons of the community waste generated in the City remains uncollected)" (Alam et al., 2008). The table below shows the total waste generated in a Kathmandu City from 2000 to 2003. The table also shows the waste collected by the KMC and NGSWMO from 2000 to 2003.

Year	2000	2001	2002	2003
Waste generation (in m^3/d)	944	949	975	1008
Waste collected by KMC (in m^3/d)	558	521	652	696
% of waste collected by KMC	59	55	67	69

Table 9: Waste generation and collection of waste by KMC (KMC, 2004)

According to KMC (2004), in 2000 the total waste generated in KMC was 944 m^3/d and the KMC had collected 558 m^3/d which is 59% of total waste collection. On the same year NGSWMO had collected 116 m^3/d which is only 17% of the total waste been collected. By 2003, the collection of KMC has reached to 69%, collecting 696 m^3/d of waste from total waste of 1008 m^3/d whereas; NGSWMO had only collected 27%, which was no change from the previous year.

Year	2000	2001	2002	2003
Waste generation (in m^3/d)	944	949	975	1008
Waste collected by the private sector (in m^3/d)	116	130	244	252
% of waste collected by the private sector	17	20	27	27

Table 10: Waste generation and collection in KMC by the private sector (KMC, 2004)

The table explains the participation of private organizations in collection of solid waste in KMC. It shows that there were only 17% of total wastes collected by private organizations in the year 2000. There has been significant increase in waste collections from private organizations till 2002 and also shows that between 2002 and 2003 the total waste collected in percentage by private organizations was constant, as the involvement of private participants in waste collection was minimal in this two year.

7.1.1.4 Waste Disposal in KMC

Alam et al., (2008) explains that KMC has only one transfer station at Teku, near to the river Bagmati. "The collected waste are at first transferred at Teku for sorting out by scavengers which after then taken to the land filling site for final dumping" (Alam et al., 2008). "Currently the solid waste is disposed of without any treatment at open dumping sites" (Axiotis, 2011) which is the main cause of environmental pollution in Kathmandu. The dumping site has no vision of proper waste treatment and also has no any engineering perspectives. "The disposal

sites are often unsuitably located with no specific form of engineering" (Axiotis, 2011). In the past KMC used the land at Gokarna, for dumping the collected waste. As because of lack of proper and systematic dumping system, local people oppose the government decision for disposing in their locality. "The local people around the landfill site in Gokarna prevented the solid waste carriers (trucks) from entering the landfill site" (Pokhrel and Viraraghavan, 2005). Furthermore, "the solid waste was even dumped once in a public place (Tundikhel) by the Kathmandu municipality as the government could not provide a proper place to dispose of the material."

After closure of Gokarna landfill site, "the waste management authorities started using the waste as a filling material for road construction along the bank of the Bagmati River without considering the adverse effect on the environment and public health (Timilsina, 2001). The un planned land filling has also contaminated nearby rivers as well. "The sewage treatment plants in Kathmandu are not functioning and the untreated sewage has to be discharged directly into the rivers" (Axiotis, 2011). In a present time Pokhrel and Viraraghavan, (2005) explains that the generated solid waste is being landfilled on the bank of the Bagmati River near Balkhu in Kathmandu without considering the effect on the water resources and the health impact on the surrounding settlement". "Now, the government has decided to develop a sanitary landfill site at Okharapouawa in Nuwakot district, approximately 26 km away from Kathmandu" (Pokhrel and Viraraghavan, 2005). "It is estimated that the solid waste of the Kathmandu valley can be landfilled in this site for the next 50 years (Mishra and Kayastha, 1998).

7.1.1.5 Governmental policies

After the withdrawn of Monarchy system from general election of constitution of 2008 AD, the country is facing a problem of unstable government till today's date. In the current scenario, Nepal is preparing second General Election for the Constitution Assembly after 6 and half years. After 2008 till today, the country is having interim constitution. This interim constitution is following the same plans and policies which were acted in previous constitution. In the solid waste management sector the government has enacted several acts and one of the most

influential Acts is SWMRM Act, 1987 which had small succession in SWM sector in Kathmandu.

- **Solid waste (Management and Resources Mobilization) Act, 1987**

"This act was created in 1987 to transfer the responsibilities of the solid waste management board to the solid waste management and resource mobilization center under the then Ministry of Works and Transport for the purpose of strengthening the efforts of the SWM Project" (Dangi, 2009). The act was amended in 1992 and 1997. Some of the major clauses described under this act are;

> *SWMRMC is responsible for solid waste storage, collection, transfer, disposal and resource recovery. It is empowered to bill service recipients and earn extra revenue by selling compost and biogas, it has the full mandate for wastes collected from container, skips, dumpsites, or from cleansing activities. It is authorized to enforce laws and penalize the code breakers. It is empowered to collect fines and necessary charges based upon the existing laws of the country. It can directly collect fees from people in service locations.* (Nippon Koci et al., 2005; Kanoon Kitab Byabastha Samiti, 2001), cited by Dangi (2009).

Dangi (2009) urge that despite of such impressive set of duties, it never went into effect completely. "The sale of compost ceased in 1990, and biogas wasn't generated form wastes until recen small-scale efforts by different groups. The act was only constrained to the city areas where high profile people are living and also applied to some major roads and intersections. " SWMRMC kept the city clean when the SWM Project was running, but those efforts were primarily applied to major roads, intersections, and wealthier neighborhoods" (Dangi, 2009). Similarly, Tuladhar (1996) describes that the revenue generating activities, such as the sale of compst, sweeping charges, disposal fees, and collection of fines were considerably reduced after the 1991.

Dangi (2009) further explains that "the act was created with support from the German government to run the SWM Project and it became obsolete with the end of the project in 1993". He also describes that "When the SWM Project ended, so did the SWMRMC's direct responsibility of SWM in Kathmandu Valley municipalities. In spite of being the first solid waste law in Nepal, it failed to provide effective legislation, especially after the project period. "Currently, the cabinet decided to refine the role of SWMRMC in the changing political situation and placed a hold on the act until it was revised; however, there has been no additional verdict by the government about the role and responsibility of SWMRMC in SWM (Nippon Koei et al., 2005, cited by Dangi, 2009).

5.3 Case study II

6.4.1 Introduction to Norway

Norway is a constitutional monarchy with the new government, which is formed by coalition between the Conservative Party (C) and the Progress Party (PrP). "Norway has been part of the European Union's internal market through the Agreement on the European Economic Area (EEA Agreement) since 1994, although it is not a member of the EU" (NMOE, 2005).

Figure 22: Map of Europe and Norway
(World atlas, 2013)

The report also explains that "the agreement institutionalizes a regular consultation process with the EEA countries, giving them opportunities to influence EU policy-making in areas of relevance to the internal marked, including environmental policies." Similarly, the report also states that "the mainland of Norway extends for 1 752 km from north to south, spanning about 13 degrees of latitude." "The total area of the mainland is 323 758 km2. The mainland coastline is 2 650 km long, excluding fjords and bays. In the east, Norway shares a border with Sweden,

Finland and Russia" (NMOE, 2005). The report also explains that the country has elongated from north to south and results wide variations in climate, geology and topography and therefore in great variations in conditions for land use. "About 30 per cent of its area lies 0–299 meters above sea level, and this is where most people live and where agricultural production is most intensive. As much as 20 per cent of the land area lies at least 900 meters above sea level" (NMOE, 2005).

"With a total area of almost 324 000 km2 and only 4.6 million inhabitants, Norway has the second lowest population density in Europe after Iceland" (NMOE, 2005). Most of the Norway's population lives in urban settlements and only few urban places consist of higher residents than other urban cities. "Only four cities Oslo, Bergen, Trondheim and Stavanger have more than 100 000 residents" (NMOE, 2005). Similarly, the report also state that only 30% of Norway population lives in the four largest cities. Oslo is the capital city of Norway. According to the official website of Oslo commune, it is the largest city of Norway by far and consist of 600 000 inhabitants. Similarly the website also claims that it consist of 15 districts. (Oslo.kommune, 2013)

6.4.2 Solid waste management in Oslo city

In Oslo municipality, every household throws 367 kg per capita in 2012 while the Norway's total waste was 430 kg per capita in 2012. (Miljostatus, 2013). According to EGE (2012) the recent data of 2012 shows that the average household waste received by EGE company was 131732 tons, which was carried out to produce bio gas and fertilizer. Like other municipality, Oslo municipality is responsible for collecting household waste and other municipality waste from the community. The responsibility of municipality is to collect, transport, segregate and produce resourceful elements like bio gas, fertilizers, central heating facilities and producing energies. Oslo municipality collects food waste, plastic and residual waste by the help of waste management vehicles. The community also allows private firm to participate in the process. "The collection and transportation of household waste are carried out by private waste management companies, which has been contracted to do so by the Agency for waste management (REN)"

(EGE, 2012). The collected wastes are taken to the next branch of Oslo municipality where these accumulated waste are transferred into energy, biogas and fertilizers.

The house hold solid waste in Oslo consists of all type of waste. According to EGE (2012), the sorting of household waste begins from house itself. The generated house hold wastes are sorted in different color plastic bags before it is taken to the dumping containers. The blue plastic contains of plastic materials, the green plastic bag is for household organic materials and the commercial white and black plastic is for other wastes. The above figure explains that all these bags of waste are collected by waste management agency of Oslo municipality. The collected wastes are taken to one of the two plant of Oslo municipality. These plants have highly advance technologies to separate different types of waste and furthermore, the wastes are treated according to its nature and finally produce different form of energies from such generated wastes. The remaining wastes coming out after all these processes which cannot be further used are thus placed in land field with proper majors. "The ashes from the incineration process are brought to metal recovery before the remnants are deposited at the land fill" EGE (2012).

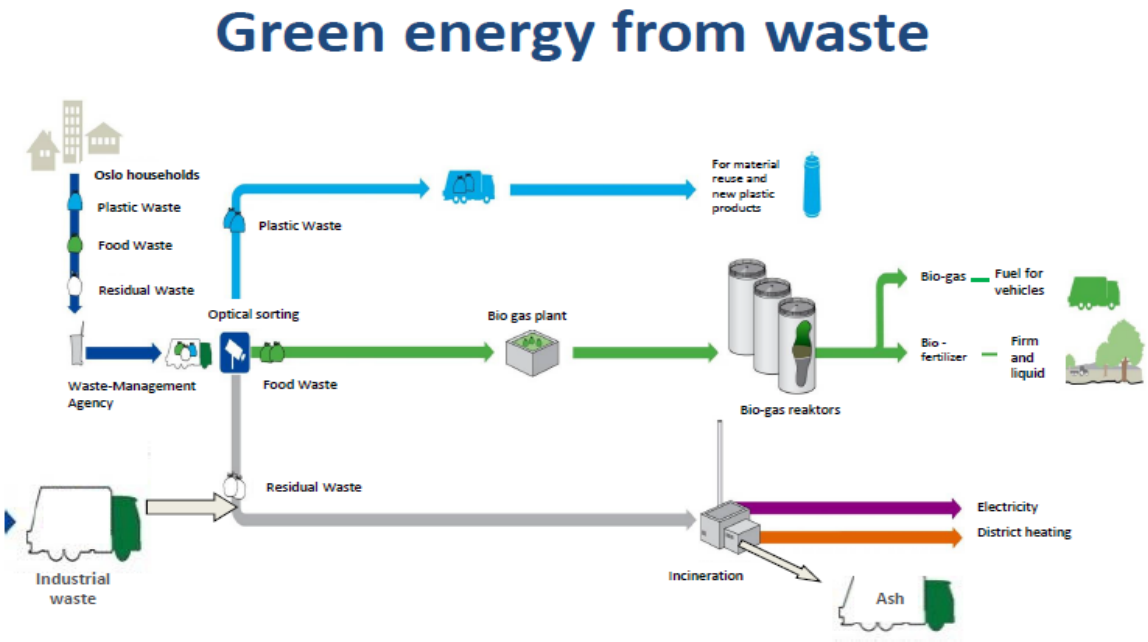

Figure 23: Green energy from waste (EGE, 2012)

The annual report of EGE (2012) provides detail information that the city consists of 2 plant Klemetsrud and Haraldrus plant and both units have more than 50000 tons of capacity annually. According to EGE (2012), the energies produced by these plants are used for electricity for households, school and public assets. Similarly, the report also explains that these two plants can produce up to 840 Gwh/ Annam heat. Furthermore, these two plants also produce Co_2 fossils and Co_2 (renewable) 148100 tons and 246900 tons respectively. According to EGE (2012) "The technologies are best available in the world Oslo community has invested 550 million NOK for the plants so that they can treat the gathered waste in a systematic manner".

5.3.2.1 Government policies

Norwegian government consists of different Acts regarding to pollution and majors for controlling the pollution. The study of Norwegian Acts about waste management helps us to understand how concerned the government is in regards to environment and sustainability. In demand of the research, only few Acts of Norwegian governments regarding waste and waste management are studied.

The Norwegian Acts regarding waste which is given in their official websites (Regjeringen, 2013) are as follows.

The Act 6 Concerning Protection Against Pollution and Concerning Acts defines that the term waste means discarded objects of personal property or substances, industrial waste means waste from public and private enterprises and institutions and special waste means waste that cannot appropriately be treated together with other household waste or industrial waste because of its size, and hazardous waste, i.e. waste that may cause serious pollution or involve a risk of injury to people and animals. Similarly, the act also explains that "No person may empty, leave, store or transport waste in such a way that it is unsightly or may cause damage or nuisance to the environment". Furthermore, the act explains that for waste storage sites and waste treatment and disposal plants that require a permit pursuant. This section describes that "the municipality shall have waste storage sites or waste treatment and disposal plants for household waste and sewage sludge and has a duty to receive such waste and sludge". In regards to collect the waste the acts explains that municipality shall make all the necessary arrangements for the collection of household waste.

Similarly, the section 10 of this act also includes different issues relating regulation and maintaining appropriate hygienic storage, collection and transport of household waste. Further it describes that no any person shall collect household waste without the consent of the municipality besides some special cases, when the pollution control authority may by regulations or in individual cases decide that the consent of the municipality is not necessary.
In order to reduce the waste the Acts explains that the pollution control authority may for example make decisions concerning:

a. Re-use,
b. Material recovery (recycling),
c. Energy recovery,
d. Destruction,
e. Collection, storage, sorting, etc.,
f. Binding goals for re-use, recovery, etc.

In regards to the collection of fee the act defines that "the municipality shall determine a fee to cover the costs associated with the waste sector, including collection, transport, reception, storage, treatment, control, etc". Similarly, the acts also describes that "the municipalities should differentiate waste management fees in cases where this may contribute to waste reduction and promote recovery".

5.4 Summary

In this chapter, Kathmandu city and Oslo city are the two municipality were compared in their geographic location and their demography. The city Kathmandu of Nepal is a small and poor city located in South East Asia where as Oslo city of Norway is one of the wealthiest nation lies in the European continent. Both cities are facing population growth. The result shows that Kathmandu has higher population growth in compare to Oslo. Both countries have very few cities with centrally located population. Urbanization has been one of the core reasons for population growth in both cities and increase in household solid waste is the mere consequence of increase in population. Although, Oslo city have growing population from the past decades the household solid waste contains lesser organic waste in compare to Kathmandu. As being a wealthy city, Oslo has successfully implemented best technology to transform the generated

waste into different energies form, which are used to meet different social need of the Oslo city. The process is also supported by the government policies. Whereas, Kathmandu is a struggling city and consists of outdated technologies which show the city's insufficiency in utilizing of generated solid waste although it consist of more organic waste than Oslo. The government policies are also out dated with continuous failure in solving solid waste problem in the Kathmandu city. There has been no any effort by the government to produce any sustainable source of energies from waste and also failure in making any policies towards reducing and transforming solid waste in Kathmandu city.

Chapter 6
Findings

7.1 Chapter Introduction

The chapter consists of information gathered from interview with informants to have in depth knowledge regarding social entrepreneurship. Informants A, B, C, were asked about the current solid waste management process in Kathmandu. The questions were related with the growing solid waste problem, the measurement procedures, how helpful was their work, information regarding social entrepreneurial venture and the future projection of solid waste management and social entrepreneurship. These informants were selected in respect to their work performance in solid waste management in Kathmandu city. These informants have prior knowledge and experience regarding solid waste management process in Kathmandu city. Similarly, Informant D was selected for detail understanding of solid waste management techniques and process in Oslo community. Informant D is an active employee in Oslo municipality in waste sector and energy recovery department. All the information was gathered by asking semi structure questions through email and direct interview methods.

6.1.1 Interview with Informant A

. Informant A explained that the present condition of Nepal is very frustrating and depressing. "*Nepal is a very troubled country that is incredibly difficult to navigate as a social entrepreneur. There are so many roadblocks, most importantly from the local and higher governments to developing a successful business. At the same time, the government is the reason why social entrepreneurs and NGO's are trying to tackle the waste problem: it is huge and the government is unable to fix it*."

Similarly, on regards of the importance of social entrepreneurship in Nepal, she says "*The society needs social entrepreneurs desperately, but is often not aware of it and sometimes not willing to cooperate."* There are mainly two reasons why nation need social entrepreneurs which was pointed out by Informant A. First, social entrepreneurs see local needs and problems and

react on those quickly, which means they are by definition fixing real problems or addressing real problematic issues. And another is lack of government involvement in meeting the societal need which gives opportunity to social entrepreneurs to strike the problem. Likewise, the future of social entrepreneur venture is very uncertain in the present context of Nepal. "*For social entrepreneurs to survive in Nepal in the long run, it is the same tale, if you stay small, I think you can have some significant results."* Similarly, Informant A further adds *"the future is so very unsure that you would never know. But if you want to grow bigger, you need the government to have a reason to want to support you, other than you're doing their job".* Informant A also explains that if any social entrepreneur ventures get support from international NGO's or countries, the venture can do better in a large scale and last for the long run.

Furthermore, in regards to institutional factors and required technologies for the waste management, Informant A explains that the idle situation is when there will be stable government in the country and the government can think about the sustainable business from such obtained waste. Informant A also explains that the government insufficiency in developing infrastructure and unable to provide the secure market for private firm to participate has caused the market failure and thus the biggest challenges for social entrepreneurship in waste management sectors as well. In regards to the government problem of corruption, Informant A says that *"Corruption is another reason why government is failing to have a good economy in the country. The corruption is also a factor here. When I was in Nepal, trainers told me that in order to make a project with the government work; you need to let them take the credit while you do the work. That way, they are at least not working against you, or doing it in a way that is worse than how you would do it".* Informant A also express that "However that is not only the case, the other factors such as illiteracy and lack of awareness in waste and waste management has also led the society facing huge problem of waste in a society."

There is a requirement of new advance landfill area as the current dumping site is already filled with overloaded dumped waste. Informant A mentions that, *"The Sisdol landfill site is full anyway"*. The government requires strategical innovation as they need to have better policies regarding the production of harmful plastic wastes. Informant A further express that "segregation, collection, treatment is what needs to be organized on a huge scale". The concept of separating organic waste, plastic waste, paper waste and other waste should start from

household itself. Additionally, Informant A suggest that government should stop purchasing cheap plastic materials from neighboring countries like China and India which has been increasing the waste problem in Nepal. Similarly, government should prohibit companies which produce those materials that cannot be recycled or reuse.

About other innovation Informant A adds *"The technology is there, you don't need advanced technology to burn all the waste if you can make sure it never ends up as waste. What you need is a community, home-grown social entrepreneurs and the conditions for them to change a system. And people seeing that, and duplicating it, improving it, until the problem is finally fixed. Or at least much better."*

6.1.2 Interview with Informant B

The informant B is Chief and Senior Divisional Engineer at Environment Management Division of Kathmandu Municipality and explains that the Kathmandu is facing serious waste problem day by day. Because of unsettle government situation and politically favored labor unions are one of the prime reason why the municipality could not able to perform with their capacity. The available technologies are outdated and required to be replaced. *"Some of the instruments are left on the garage for more than years"* says Informant B. Similarly, regarding the participation of social entrepreneurs Informant B explains that "*there is no any record of any social entrepreneurs coming forward to solve the waste problem by far only private organization and NGO comes up with the idea to solve the waist problem only in their own region".* Informant B further explains that there were numerous times the private firm came with the idea but because of their un- reliability nature and lack of convincing attitude, the government could not trust any of the private firm for the job. Informant B further explains that private firms have failed to submit the required documents like private firm certificate, tax payment certificates etc. Likewise, the private firm has failed to explain the vision and mission of their business. These are some reasons why government does not believe private firm to help them. Informant B also says that *"most of the private firm only wants to take contract and permission, when we ask the required manpower and technologies, they will not show up again. They do not focus on solving problem, only collecting money"*. According to Informant B *"the government feel somewhat fear*

of giving permission to private institute because our current employee might lost their job which is very concerned things to the labor union parties".

In regarding to the current performance of the waste management, the government has no any vision of recycling and reusing of waste. The collected waste are directly carried out by the help of different vehicles like Truck, Tripper etc to the Sisdol land filled sites which then directly fill the land without any precaution majors and covered by the soil from top. About the future project and plans Informant B explained that "we have informed government about our problem for several time but no one responded, I think before the general election and without the new constitution we will not have any plans, the process will be as it is. After when the new government reforms, they will give us the decisions for our proposals and then we will follow the directions". "However, we have been providing awareness program regarding household waste management and compost fertilizers to the local people" Informant B.

6.1.3 Interview with Informant C

The interview was taken with Informant C. Informant C is an active president of Jagaruk Mahila Bikash Samuha (JMBS). The organization is NGO which is funded by small donation, government grants and personal income. The organization is active in collecting plastic waste and providing training program to the local people of Lalitpur, to produce compost fertilizer from their household organic waste. In regard to the waste collection and management Informant C explains that "*the organization helps local people to understand the importance of compost fertilizer in their farming and also collects their plastic materials and pay's them for bringing the plastic waste"*. Furthermore, the collected plastics are used for making handicraft products and sell at the local market, remaining plastic wastes are again taken to the landfill area for disposing.

Informant C also explains that "*they have not been fully supported by the municipalities, and further describes that the municipalities doesn't have enough materials which they require"*. Municipality sells the compost bin to them at the subsidize rate and they sell these bins again to the local community with little profit margin and provide the free education for proper

decomposition of organic food. *"The project is getting success day by day, people are getting more and more aware about their household waste and the fertilizer"* Informant C says. Informant C also focuses on the level of understanding about waste in general public. *"A general person thinks waste as a burden, this burden need to be carried out by the government agencies not by themselves."* Informant C further highlights that general perception towards local government that *"we the general people are paying tax to the government, cleaning waste is government responsibilities not ours."* Because of such lower understanding of waste management, cleaning process is sometimes gets difficulties.

Likewise, because of low financing capacity of the organization, growth has been restrained and could not aim for the bigger projects. "*Financially we are poor in compare to other NGO, because of that the bigger opportunities are slipping away from our hand*" Informant C says. Regarding the licensing about the organization Informant C explains that "*we are very soon going to get our company registered license and after that we will apply for the project with government."*

Similarly, on the topic of social entrepreneurship, Informant C explains that *"of course we will love to be a social entrepreneur but at first we need to have few more experience, improve our networks and save some money, hope the day will come soon"*.

6.1.4 Interview with Informant D

To understand the earnings from solid waste management, the interview was taken with Informant D. Informant D is the current Communications Adviser of Waste-to-Energy Agency, Municipality of Oslo. According to Informant D, waste is a very good source of earnings and a reliable source for sustainable development. The agency produces bio gas, bio fertilizers, heat and electricity. *"The agency is not only meeting the societal need by distributing district heating and electricity to the household in Oslo but they also collect revenue by selling the produced energies to the other private business, household, institution etc."* described by Informant D. Similarly, the agency had an earning of NOK 496.5 million in 2012 which is equivalent to Nepalese Rupees 8.1 billion (1NOK=16.45 Rs). Informant D further explains although the

agency use expensive new technologies, the revenue generate is huge and in near future the agency can overcome all of their investments.

Furthermore, the agency is helping Oslo community to reduce the growing waste problem and helps to meet the ambition of Oslo community which is to cut CO_2 by 2030. *"we are very proud that our latest technologies cuts down the emission of CO_2 by 99.98%."* Informant D further makes fun about the emission of CO_2 that *"it's healthy to inhale the emitted air from the chimney of our plant rather than smoke a cigarette"*.

6.2 Summary

The chapter consists of interviews from different informants. The purpose of gathering interview with these people is to understand the present condition of solid waste management in Kathmandu and Oslo. This chapter helps us to understand the different process and technology undertaken in Kathmandu and Oslo community. Similarly, it also provides the general knowledge regarding solid waste management in two different cities.

Chapter 7

Discussion and Analysis

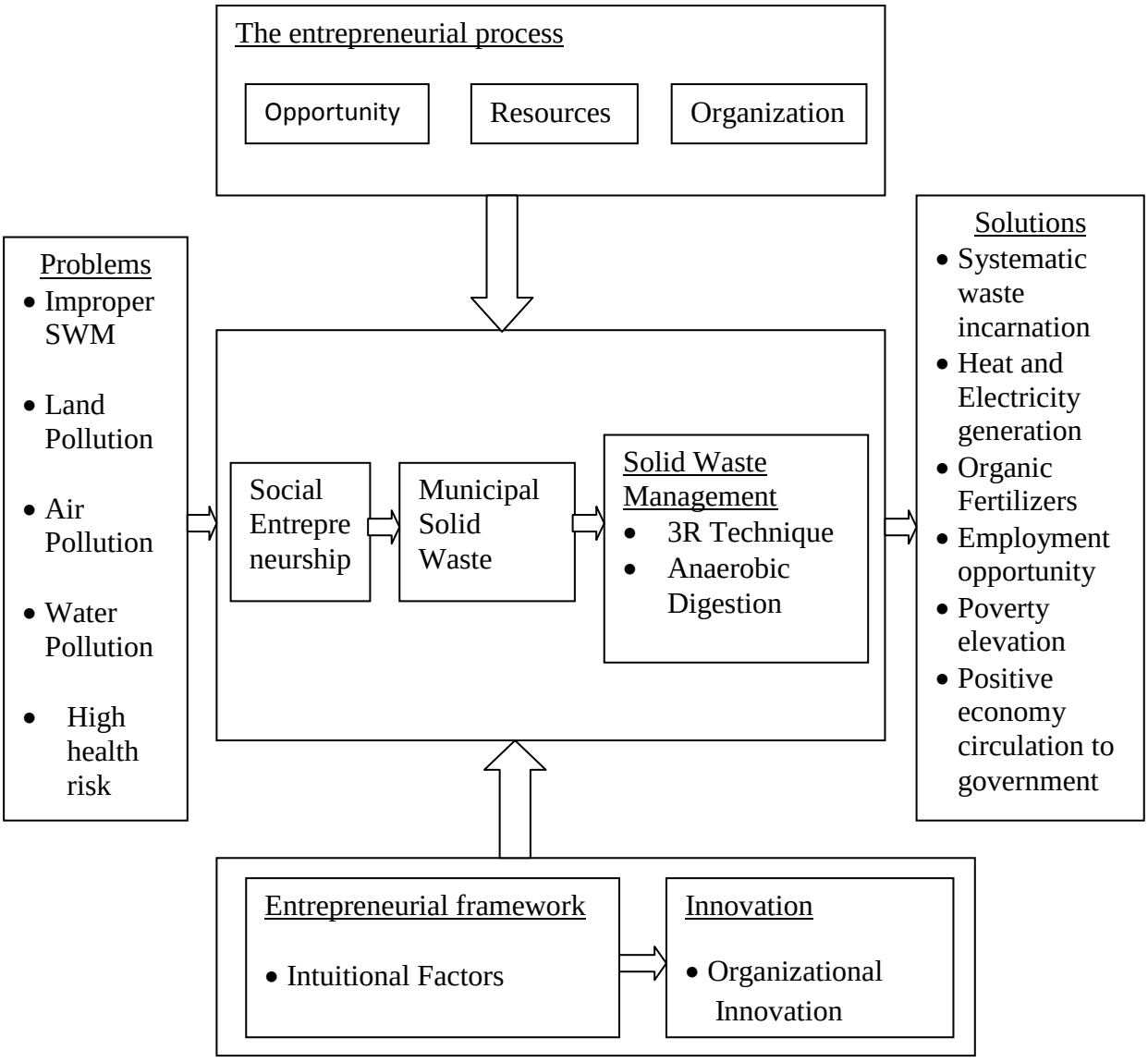

Figure 13: Framework for social entrepreneurship to address social waste problems

As from the theory of social entrepreneurship, the social entrepreneurship as defined by Zahra et al., (2009) explains that "social entrepreneurship consists of activities and process which are undertaken in order to discover, define and exploit opportunities in result of that it enhance social welfare by creating new venture or managing existing organization in an innovative manner".

From the literature part what we come across that the social entrepreneurship requires entrepreneurship process. The entrepreneurial process given by Wickham (2004, p.133) says that it is the generalized way which gives framework for understanding how entrepreneurship creates new wealth in several terms". In brief, it explains the guidance for decision making for planning to optimize the resources and organize the team in order to exploit the opportunity by the entrepreneurs. In term of social solid waste problem in Kathmandu city, the entrepreneurial process can be explained as the process of identifying social solid waste opportunity and to exploit this opportunity. The social entrepreneur accumulate the necessary resources like financial, human, operating, etc and organizes the team by recruiting qualified and skilled manpower as per the necessity and thus strike the opportunity for the purpose of creating social value and generate income. The solid waste consists of different problem like air/water/land pollution, disease associated with public health, degradation in the beauty of landscape and national monuments, etc. After analyzing the social problem in a society, the social entrepreneur recognize social entrepreneurial process and approaches the municipal solid waste (as it require most of the attention), utilizes the municipal solid waste as a source of opportunity and further exploit it by the help of different process among which 3R and Anaerobic digestion are appropriate in Kathmandu city. Thus provide the solution by reducing the amount of solid waste in the environment, creating employment opportunities, reduce the health risk in society, provides sustainable source of heat and electricity etc.

Similarly, the nature of social entrepreneurial process truly depends upon the innovation. Innovation which is explained in the literature part by Drucker (1985) is the tool for entrepreneurship and also a specific instrument for entrepreneurial process. Without the new idea or innovation, the entrepreneurial process cannot be considered as a new business or new approach to the business. Innovation defines the nature of process of opportunity exploitation and also recognizing the required resources further organizes the structure of organization as per the demand and need. In order to maximum utilization of solid waste opportunity, an innovation could be an important element to be studied. From my findings, the opportunity of waste has not yet been fully recognized by the social entrepreneurs in Kathmandu city. Although, there are few social entrepreneurs trying to optimize the waste opportunity they are still lacking with the important element such as Innovation because of which they are failing to meet the social need

and hence failing to gather enough income for their business to survive. Additionally, from the literature part we understand that the innovation is the most required field of study for the exploitation of any opportunity in a new way, thus resulting organization to have a competitive advantage. Similarly, the findings show that both government and non-government sector are using the same old process and technology to deal with the waste problems thus restricting them to grow in the waste market. Organizational innovation can further help organization to pursue the new goal and also establish the new opportunity in solid waste business sector. The organizational innovation further classified into: product and process, technical and administration and radial and incremental. The finding extracted from different informants explains that there has been none of the organizational innovation implemented in recent time in the solid waste management process in Kathmandu city after the last technology and strategies were adopted. The old and traditional process has been followed till now. There is a lack of radical and incremental innovation in both government as well as private NGO's, as in the absence of such innovation, the organizations cannot approach the future problem. Either by lack of finance or by the lack of supportive policies, there have been no any influential change in the process. Thus organizational innovations were almost negligible in both organizations in solid waste management process in Kathmandu city. But the selection of right innovation to exploit the social waste opportunity needs to be permitted by the legal policies of Nepal which is framed by institutional environmental factor. It is also necessary to understand in what circumstances entrepreneurs and social entrepreneurs can optimize the resources available in Kathmandu city. So the next paragraph explains the current policies and governmental effect on the entrepreneurial and social entrepreneurial process in Kathmandu city.

The entrepreneurial institutional framework is the guidance for any entrepreneurial activities in a specific market or place. As explained by Venkataraman (1997), the entrepreneurial framework provides the information regarding how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited. The institutional framework is another important element to be studied in order to form a entrepreneurial as well as social entrepreneurial business in solid waste management in Kathmandu city. This framework informs us the nature of the market, social and cultural belief, technological advancement and political and legal framework in a particular market which is formal institution. The framework also

explains how entrepreneurs see the opportunity and to decide the exploitation opportunity what factors drives them to make the decision which is described as informal institution. As my paper was more focused on external institutional which is formal institutional factors, the analysis is based upon the external factor which can influence entrepreneurs and social entrepreneurs in setting the new or mobilizing the available solid waste business in Kathmandu city. From my findings, what I disclose was the affect of the political factor in Nepalese market has relatively higher than other external institutional factor. The findings shows that political insecurities has affected the smooth functioning of government projects in waste sector and has also restricted private firms to grow in waste market. There are some cases where labor union issues have limited government willingness to provide opportunity to private firm to participate in waste management business. Likewise, lack of proper execution of available plan, corruption in the work process, ignorance in waste sector, etc has led the increase in waste problem in Kathmandu city. The discouraging behavior of political condition and governmental policies and their scope towards systematic waste management has not only de-motivated private firm to select waste business but it has also affected the social entrepreneurs to capture the waste opportunity and perhaps the only strong reason for growing waste problem in Kathmandu city.

In contrast from my findings, the affect of the political factor in Nepalese market has relatively higher than other external institutional factor. The findings shows that political insecurities has affected the smooth functioning of government projects in waste sector and has also restricted private firms to grow in waste market. There are some cases where labor union issues have limited government willingness to provide opportunity to private firm to participate in waste management business. Likewise, lack of proper execution of available plan, corruption in the work process, ignorance in waste sector, etc has led the increase in waste problem in Kathmandu city. The discouraging behavior of political condition and governmental policies and their scope towards systematic waste management has not only de-motivated private firm to select waste business but it has also affected the social entrepreneurs to capture the waste opportunity and perhaps the only strong reason for growing waste problem in Kathmandu city.

Additionally, the nature of organizational and technological innovation is also affected by the external institutional factors. The external environment also determines the level of innovation required in the particular market. For an example there is no point to use high tech and advanced

innovative project where the economy of the market could not afford to pay back the returns in the decided time period. The innovations are shaped by the government restriction. The social entrepreneurship in waste management business in Kathmandu need innovation but not such an advanced innovation that the high income countries have been installing. The required innovation in the technology which can help the society to reduce their waste problem and which can be affordable by the Nepalese market are only in demand and should be structured and reshaped by relating with the nature of the Nepalese market. For an example we cannot expect the social entrepreneurs in Kathmandu city to install advance technology like Oslo community to develop different form of energies and sell it to the local market with the price which cannot be afforded by the local people. But what we can expect from the high tech waste incineration process is that they can provide the basic concept of how the process works and such knowledge can be used in a simple anaerobic digestion method to recover some energy and fertilizers which they can sell in a profit to the local people. For this argument, I have already mentioned that the evidence of growing population with subsequently increase in solid waste and therefore availability and generation of organic waste from Kathmandu city in chapter 5.

Chapter 8
Conclusion and Recommendation

8.1 Conclusion and Recommendations

The study was set out to understand **"How social entrepreneurship can address the solid waste problem in Kathmandu"**. As solid waste management is a social problem to the society, social entrepreneurship perspective towards the solution of this social problem can be a different dimension to be studied. In order to make it more convenient to study the research question are further divided into the simple and small objectives so that in-depth information can be extracted. The specific objectives were:

- To identify the current performance of Kathmandu City in managing solid waste.
- To identify the required innovation for Social Entrepreneurs to deal with SWM business in Kathmandu City.
- To identify the feasibility of Social Entrepreneurs in solid SWM business in Kathmandu City.
- Suggest the probable and affordable solution for Social Entrepreneurs in SWM business in Kathmandu City.

8.2 Conclusion of thesis

Solid waste management is a big problem in Kathmandu City. Growing solid waste has created different problem like air pollution, water pollution, health associated diseases etc. The solid waste management is a social problem as it is created by the society and it belongs in the society. The waste management process is a never ending process so it should be manage timely. The Kathmandu city has been facing the growing solid waste problem from past centuries. As being a poor nation, it has contributed very less effort in managing the solid waste problem in major cities including Kathmandu as well. Thus systematic integrated solid waste management process in Kathmandu is urgent. One of the approaches to address this problem is by creating a business in such sector. This kind of business which addresses social problem is commonly known as

Social Entrepreneurship. Thus, to study social entrepreneurship in solid waste management in Kathmandu was and also to analyze the better solution was necessary.

The paper analyzes different literature regarding social entrepreneurship and also distinguishes the conceptual differences between classical entrepreneurship and social entrepreneurship. It also studies the basic elements for the successful social entrepreneurial business in solid waste management sector in Kathmandu city. The paper identifies that Kathmandu city has been suffering from social problem of solid waste from past centuries. Lack of government inefficiency and lack of private business interest have created the gap between social demand and solution. This gap can be fulfilled by the social entrepreneurship, by which social entrepreneurs can meet the social solution of solid waste. The social entrepreneurship not only possess the capability to reduce the social problem of solid waste but it can also provide economic support to the government by creating employment opportunity and generate profit from the free resources like solid waste. Similarly, the city can also get different form of energies if government can provide better environment for social entrepreneurial business in solid waste sector. The discovery of social opportunity and its utilization is basically determined by nature of opportunity exploited, resources accumulated and structure of organization. As from the paper the solid waste is also a social opportunity. Thus to utilize this opportunity, resources like financial, human and operating resources should be accumulated. Similarly, the organization should be organized so that the division of duties and responsibilities can be identified and accordingly structured can be ordered.

In order to obtain this opportunity, proper innovation should be discovered. Organizational innovation can further help to identify the new methods and techniques in solid waste management system which helps social entrepreneurs to solve the solid waste problem differently and conveniently than traditional methods used by the government and other private sector. From the paper, Kathmandu city is using the old traditional process to manage the solid waste problem. This paper will explain the basic requirement process and the common strategies use in solid waste management process which can be a learning lesson for Kathmandu city. Although the city cannot afford to install the latest technologies to solve the growing waste problem, but they can change or modify their current strategy to manage the solid waste

management process by the help of organizational innovation. The process can be for an e.g. solid waste source separation and involving private firm to collect the household waste could be an innovative strategy adopted. The paper also explains different types of simple and affordable waste management techniques, which comes from organizational innovation and allows them to solve at least some section of solid waste for an instance. Similarly, by studying other countries ways of treating solid waste management can also be a good learning and hence improvising with the available resources can also be an initial step for the solution. The organizational innovation can also helps organization to manage the available resources. Through proper training and learning program, the skill of employee can be enhanced. Similarly, it can also help organization to select the right partners for the business which can allow them to perform in a qualitative way.

The careful study of external institutional factor in solid waste business in Kathmandu city can help social entrepreneurs to make appropriate decisions before initiating the business. The study explains how external institutional factor affects entrepreneurial process. Similarly, the favorable environment for the social entrepreneurship business in solid waste management could be a very few participation of private firms in such business and also inefficiency of government to provide the solution. However, if there are other factors like unsettled political environment, political labor union, un described policies can hamper social entrepreneurial process in a solid waste management business. The unsettled government has always been affecting business environment. Both profit oriented and non-profit oriented businesses has a negative affect with unsettled government and with their policies. The distinct plans and procedures by government sector in solid waste management could help social entrepreneurship to flourish in solid waste management.

8.3 Implication and Recommendation

The contribution of this study provides a new dimension to analyze the solid waste problem as a source of income and settlement of unemployment problem in Kathmandu city. In this paper the Oslo community's solid waste management techniques and their production of green energies were studied. This paper provides the knowledge regarding the possible process that might help

solid waste management in Kathmandu city. This paper also provides the information about how all the household solid waste can be transformed into reliable source of energies by studying Oslo community practices on solid waste management. The paper can be very helpful to the governmental agencies and also equally beneficial for the future social entrepreneurs who would like to start a new social entrepreneurial venture in solid waste management in Kathmandu city who can get deep knowledge regarding transforming social solid waste problem into basic earnings for the society or perhaps for the country. Likewise, reduction in corruption, organized labor union and use of available latest technologies from the market could also improve the solid waste business for government in Kathmandu city. Similarly, government could also make effective policies and implementation program to motivate private as well as social entrepreneurs to participate.

8.4 Limitation

The research materials in social entrepreneurship and solid waste management are very limited. The cross country analysis has both advantages as well as disadvantages. The studies of cross country social entrepreneurship are also very limited. The research on social problem has mostly found under the sustainable entrepreneurship, thus limiting the idea of social entrepreneurship in a very small focal point in between entrepreneurship and sustainable entrepreneurship. This also resembles that we need more and deep research studies only for social entrepreneurship. We further require more case studies regarding social entrepreneurship and solid waste management from different perspective. Thus, theses studies will provide the core understanding in the relationship between social venture formation and social entrepreneurial process in solid waste business.

8.5 Future research

This new concept of social entrepreneurship in solid waste management in Kathmandu city can provides supportive study for the further exploration in social entrepreneurship and solid waste management. Further research can investigate different attribute of social entrepreneurial process in solid waste management sector. Similarly, future research can also studies different

entrepreneurial framework which I have limited out in solid waste management sector. It also reflects that there is a need of better understanding in relationship between social entrepreneurial process, innovation for opportunity recognition and entrepreneurial framework.

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Appendix

Appendix 1

General topic discussed with the informants A, B, C

1) The present condition of solid waste in Kathmandu.
2) The general solid waste management performance.
3) The organization specific work and evaluation.
4) Past and present performance and future approaches.
5) Your investments and Technologies used.
6) Your strategies to reduce solid waste.
7) Ideas about social entrepreneurship and how do they perform.

All the interview are recorded in audio format, therefore it is very difficult to adjust with this paper, and it will be available if there is any requirement for the audio files.